COMPARING THE EFFICACY OF VISUAL INSPECTION OF CERVIX WITH ACETIC ACID (VIA) AND LUGOL'S IODINE (VILI) WITH PAP SMEAR CYTOLOGY IN SCREENING FOR CANCER CERVIX IN ASYMPTOMATIC WOMEN

Dissertation Submitted to

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M.D. (BRANCH – II)
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GOVT. KASTHURBHA GANDHI HOSPITAL FOR WOMEN & CHILDREN

MADRAS MEDICAL COLLEGE
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CHENNAI, INDIA.

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CERTIFICATE

This is to certify that this dissertation entitled **COMPARING THE EFFICACY OF VISUAL INSPECTION OF CERVIX WITH ACETIC ACID (VIA) AND LUGOL'S IODINE (VILI) WITH PAP SMEAR CYTOLOGY IN SCREENING FOR CANCER CERVIX IN ASYMPTOMATIC WOMEN** is a bonafide work done by Dr.E.Vijayalakshmi post graduate in M.D (OBSTETRICS & GYNACOLOGY) under my guidance and supervision at Govt Kasturbha Gandhi Hospital, Madras Medical college, Chennai in partial fulfillment of the requirements for M.D. (Branch II – Obstetrics & Gynaecology) Examination of the Tamilnadu Dr. M.G.R Medical University to be held in September 2006.

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DECLARATION

I, DR.E.VIJAYALAKSHMI, solemnly declare that dissertation titled "A PROSPECTIVE STUDY COMPARING THE EFFICACY OF VISUAL INSPECTION OF CERVIX WITH ACETIC ACID (VIA) AND LUGOL'S IODINE (VILI) WITH PAP SMEAR CYTOLOGY IN SCREENING FOR CANCER CERVIX IN ASYMPTOMATIC WOMEN**" is a bonafide work done by me at Govt. Kasturbha Gandhi Hospital, Madras Medical College, Chennai during 2003-2006 under guidance and supervision of Prof.Dr.S.Dhanalakshmi M.D., D.G.O., M.N.A.M.S., Superintendent, Govt Kasturbha Gandhi Hospital, Chennai.**

This dissertation is submitted to Tamilnadu DR. M.G.R Medical University, towards partial fulfillment of requirement for the award of M.D. Degree (Branch – II) in Obstretics & Gynaecology.

Place : Chennai.

Date :

(DR.E.VIJAYALAKSHMI)

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INTRODUCTION

CANCER CERVIX:

Of all the responsibilities of the gynaecologist in modern world perhaps none is as important as the detection of neoplasia at the earliest. Cancer cervix is the most common cancer in women in the developing countries & second most common form of cancer in women throughout the world.

Approximately 16,000 new cases of cervical cancer are diagnosed each year. About 4,800 women die from this disease annually. The 5 years survival rate is 90% for localized cervical cancer and it is considerably lower (14%) for persons with advanced stage IV disease. The incidence of invasive cervical cancer has decreased significantly over the last 40 years, mainly because of early detection programs.

Although all sexually active women are at risk for cervical cancer, the disease is more common among women of low socioeconomic status, those with multiple sexual partners, smokers and those with HPV infection.[4]

INCIDENCE

Among the total incidence of cancer cervix 78% occur the developing countries (15% of Female Malignancies).

In the developing countries the incidence is 12 per 100,000 women and in the developed countries it is 7.6 per 100,000.[4]

PREVALENCE

A conservative estimate of global prevalence based upon 2000 data suggests that there are nearly 1.4 million cases of clinically recognized cervical cancer (based on the number of patients still alive five years after diagnosis).1 The vast majority of these cases occurred in developing countries. This estimate reflects the accumulation of cases each year and the fact that few women in developing countries receive treatment. Current knowledge of the natural history of cervical cancer suggests that two to five times as many women may have potential precursor conditions of cervical cancer as have invasive cancer. Therefore, as many as 7,000,000 women worldwide may have high-grade dysplasia that should be identified and treated.

Existing estimates of cervical cancer incidence, prevalence, and mortality probably are lower than actual rates, largely because many women

with cervical cancer do not receive medical care and thus are not included in cancer registry data. Limitations of diagnostic facilities and their tendency not to reach older women, those with late-stage illness, or those unable to pay for services present further challenges to

developing accurate estimates. In addition, the lack of organized health information systems makes recording the number of women with cervical cancer problematic.[4]

SCREEENING FOR CANCER CERVIX

Routine screnning for cervical cancer with papanicolaou (pap) testing is recommended for all women who are or have been sexually active. Now screening using visual inspection of cervix is being recommended especially is low resource countries like India.

In India the number of trained cytopathologist is minimal even with a twelve fold increase in these staff only 25% of women over 35 years could be screened therefore there is a distinct need for alternate strategy to detect cancer cervix at an earlier stage.[4]

One Such Strategy – Visual Screening, in asymptomatic women so as to detect cancer cervix – in early stages. Visual inspection consists of down staging and aided visual inspection.

OTHER OPTIONS

1. Cervicography
2. Colposcopy.
3. Automated pap tests

4. Molecular HPV –DNA Studies.

Down staging

Just simple speculum examination done to identify early abnormal change on the cervix.

Aided Visual Inspection

Either Magnification or Chemical enhancement with acetic acid and lugol's iodine.

SOME OF THE VISUAL INSPECTION STUDIES

1.Test characteristic of visual inspection with 4% acetic acid (VIA) and lugol's iodine (VILI) in cervical cancer screening in kerala, India by SANKARANARAYANAN. R

4444 women

25 yrs to 60 yrs

Kerala, India.

All patients were subjected to VIA ;VILI;PAP SMEAR CYTOLOGY & positive cases were subjected to biopsy. Based on the results VIA & VILI were considered to be suitable alternative screening test to cytology for detecting cervical neoplasia in low resource settings.[26]

2. Visual inspection with acetic acid and cytology in early detection of cervical neoplasia., Kolkata, India.SANKARANARANAN **(**in collaboration with Calcutta cervical cancer early detection group).

5881 Women

30-64 Years

Screened by VIA /VIAM/Cytology.

Positive cases were subjected to biopsy.

18.7 %, 17 %, 8.2% tested positive for VIA, VIAM, Cytology respectively.

They concluded that VIA & VIAM had significantly higher sensitivity than cytology.[26]

My Study is based on the evidences provided by the above studies

AIM OF STUDY

This study aims at detecting the efficacy of Visual Inspection with Acetic acid (VIA) & Visual Inspection with Lugol's Iodine (VILI) in the early detection of cancer cervix.

The relative efficacy of these two methods is compared with pap smear & cervical biopsy, to choose an easily interpretable low cost but equally effective method for early detection of cancer cervix .

REVIEW OF LITERATURE

The highest age-standardized incidence rates of cervical cancer have been reported in Asia, Southern Africa, Central America, Eastern Africa, and South America An important reason for the high cervical cancer incidence in developing countries in comparison to developed countries is the lack of effective screening programs aimed at detecting precancerous conditions and treating them before they progress to invasive cancer. A 1985 estimate indicated that only about five percent of women in developing countries had been screened for cervical neoplasia in the previous five years, compared with 40 to 50 percent of women in developed countries.5 It is unlikely that this disparity has changed significantly. Lack of access to screening compounds the effect of high rates of human papillomavirus (HPV) infection, are the primary underlying cause of cervical cancer.

The 2000 estimate of global cervical cancer incidence is over 25 percent higher than the 1990 estimate.

In 1851**,** Robert Hull, introduced the use of vaginal speculum which revealed an epidemic of uterine disease. The existence of preinvasive stage in the development of cervical cancer has been known. Since Sir John Williams in the Haverian lectures in (1886) presented a case of symptomless cancer cervix (known as carcinorma in situ, now). Papanicolaou & Traut first reported the use of exfoliative cervical cytology for the diagnosis of cervical cancer & precancer (1945) and the technique was improved with Ayre's wooden spaluta. Hinselmann in Germany first published an account of colposcopy in 1925. It has become possible to observe cancer at its very earliest stage.Boys & Worth

(1979) declared that introduction of cytological screening for cancer cervix in developing countries reduced the morbidity & mortality of cancer cervix.

The first cervical cancer prevention programs were based on the premise that the disease developed from precursor lesions (broadly known as dysplasia), progressing steadily from mild to moderate to severe dysplasia to

carcinoma *in situ* (CIS), and then to cancer. In fact, it now appears that the direct precursor to cervical cancer is high-grade dysplasia, which can progress to cervical cancer over a period of up to 10 years .Most lower-grade dysplasia regresses or does not progress, particularly lower-grade incident cases in younger women (aged 34 or less).

Cervical Screening Recommendations 1988 and 2002-2003 [9]

	1988 Consensus Guidelines [27]	2002 ACS Guidelines [36]	2003 ACOG Guidelines [37]	2003 USPSTF Guidelines [38]
When to start screening	Age 18 or with onset of sexual intercourse	Age 21 or about 3 yrs after onset of vaginal intercourse	Age 21 or about 3 yrs after onset of vaginal intercourse	Age 21 or about 3 yrs after onset of vaginal intercourse
Screening Interval	Annually until 3 consecutive satisfactory negatives then interval may be extended at the discretion of provider	Annually unitl age 30, Biennially if liquid based cytology used	Annually until age 30 using either conventional or liquid based cytology	Every 3 yrs
		Age 30 or older after 3 consecutive satisfactory negatives may	Age 30 or older after 3 consecutive satisfactory negatives and	

		screen every 2-3 yrs	no history of CIN 2 or 3 may screen every 2-3 yrs	
When to stop screening	No upper limit	Age 70 in well screened, low risk women	Evidence inconclusive to set upper age	Age 65 in well screened, low risk women
Post hysterectomy	No recommendations	Screening not recommended after hysterectomy for benign indications if cervix removed if no prior CIN 2 or 3	Screening not recommended after hysterectomy for benign indications if cervix removed if no prior CIN 2 or 3	Discontinue screening after hysterectomy if no evidence of cervical neoplasia or cancer

Screening: Visual Approaches

Considerable research has been undertaken recently to explore the accuracy and acceptability of visual inspection as a means of detecting pre-cursor cervical disease and/or cancer. Visual screening is a process of identifying cervical lesions without reliance on cytology (Pap smears). There are several types of visual screening. Early studies utilized visual inspection (VI), which involved simply looking at the cervix with the unaided eye for any signs of early cancer. Also known as "downstaging," this approach was not accurate in identifying precancerous conditions.[4]

Visual inspection with acetic acid (VIA) is considered a more promising screening approach for identifying precancerous lesions.

This screening approach involves swabbing the cervix with an acetic acid solution prior to

visual examination. Differences in precancerous cell structure and absorption rates make abnormal cells temporarily turn white when exposed to this solution. Alternatively, some visual screening approaches have used the application of an iodine-based solution (Lugol's solution) as a means of staining normal cervical cells brown, leaving the abnormal cells with a yellow or unstained appearance.[20]

In general, the sensitivity of VIA in detecting high-grade dysplasia is at least equal to that of cytology, while VIA's specificity is somewhat lower. The feasibility of utilizing VIA for wide-scale screening to a large extent will be determined by the effectiveness of training and monitoring efforts. VIA shows promise as an option for identifying precancerous lesions in many settings, either in conjunction with or as an alternative to other screening approaches.

Technology used for visual screening methods [9]

Term used for method	Magnification	Enhancement
Schiller test Lugol's Iodine test Visual inspection with Lugol's iodine	No	Iodine Staining
Downstaging	No	No
Direct visual inspection	No	3% - 5% acetic acid solution
Acetic acid washes Acetic acid visualization Acetic acid screening test Visual inspection with acetic acid cervicoscopy Acetic acid test		
Aided visual inspection Gynoscopy	2.5 –4 x	3% - 5% acetic acid solution

Avioscopy DVI with magnification Visual inspection with acetic acid and magnification		
Speculoscopy	4-6 x magnification	3% - 5% acetic acid solution
Cervicography	35 mm photograph	3% - 5% acetic acid solution

Visual Inspection With Magnification

VIA with magnification (VIAM) uses a magnifying lens with a built-in light source to examine the cervix after application of acetic acid. A small Indonesian **16** evaluation of an earlier version of the device (2.5 magnification) indicated that VIAM may achieve sensitivity and specificity of over 90 percent in identifying pre-invasive cervical lesions.

Preliminary findings from an ongoing study in Calcutta, India, indicate that VIAM has a sensitivity of 69 percent and specificity of 82 percent.12 It is not yet known whether use of magnification offers a significant advantage over VIA, although the potential for increased specificity is of particular interest.

REPORTING VISUAL INSPECTION FINDINGS

NORMAL

- Smooth, Pink.
- Clear Mucoid Secretion.
- External Os Central Hole, Round - Nulliparous Slit –

Multipara.

- Atrophic – Post Menopausal.

ABNORMAL

Infection	:	Hypertrophy.
Ectopy	:	Redness / Congestion
Benign Tumour	:	Irregualr Surface
		Distortion,simple erosions. (Do not bleed on touch)
		Cervical polyps.(With smooth surface)
		Abnormal discharge (foul smelling, dirty white greenish)
		Nabothian follicles
Suspicious of Maligancy		lesions that bleeds on touch / irregular surface,friable growth

AFTER ACETIC ACID APPLICATION

VIA Positive	Acetowhite areas present
VIA Negative	Acetowhite areas not present.

Different categories used to classify results to direct visual inspection

Category	**Results**
Suspicious	Cervical ulcer or exophytic growth suspicious for carcinoma
Definite Lesion	Acetowhite lesion with well – circumscribed border
Non confluent scattered lesion	Focal small, punctuated areas of acetowhitening
III defined lesion	Poorly circumstanced and faintly acetowhite
No Lesion	No acetowhite lesion visible

Negative VILI

- Normal Cervix
- Polyps: - Pale areas with no/partial iodine uptake on polyus
- Leopard skin appearance is associated with T. Vaginalis infection
- Pepper like non iodine uptake areas are seen in the squamous epithelium away from the squamocolumnar junction.
- Satellite like, non-iodine uptake areas away from the squmocolumnar junction.

Positive VILI

The outcome is scored as positive if dense, thick, bright mustard yellow or saffron – yellow iodine non-uptake areas are seen in tranformation zone close to or abutting squmocolumnar junction or when the entire cervix densely yellow.

VILI Positive (Invasive Cancer)

When a frank, nodular, irrgular, ulceroproliferative growth is visible on the cervix which turns yellow on application of iodine.

PAP SMEAR

Pap screening has achieved only moderate levels of sensitivity, however, meaning that a low proportion of individuals with dysplasia is correctly identified by the test as having dysplasia. A recent meta-analysis found that cervical cytology had an overall sensitivity of 51 percent and a specificity of 98 percent.

A Costa Rica study found that Pap screening had 78 percent sensitivity and 94 percent specificity in identifying atypical squamous cells of unspecified significance.

THE PAPANICOLAOU SMEAR TERMINOLOGY IN CERVICAL CYTOLOGY - THE BETHESDA SYSTEM

The introduction of evaluation of cellular material from the cervix and vagina for the diagnosis of cervical carcinoma is generally attributed to George Papanicolaou

Pap smear nomenclature [9]

Papanicolaou Class system (1954)	Descriptive (1968)	CIN 1978 (Cervical intra epithelial neoplasia)	Bethesda system (1988)
Class I	-Negative for malignant cells	Negative	Within normal limits
Class II	-Inflammatory atypia -Squamous atypia -Koilocytic atypia	Negative	Reactive and reparative changes Atypical squamous cells of undetermined significance
Class III	Mild dysplasia Moderate dysplasia Severe dysplasia	CIN-I CIN-II CIN-III	-Low grade squamous Intraepithelial lesion High grade squamous intraepithelial lesion (HSIL) HSIL
Class IV	Carcinoma insitu	CIN-III	HSIL
Class V	Invasive carcinoma	Invasive carcinoma	Invasive carcinoma

BETHESDA SYSTEM FOR REPORTING CERVICAL / VAGINAL CYTOLOGIC DIAGNOSIS (2001) REVISION

General Categorization

1) Within Normal limits
2) Benign cellular changes

3) Epithelial cell abnormality

Benign Cellular Changes (BCC)

Infection and reactive or reparative changes are included under the category of BCC

INFECTION (10% OF CASES)

1) Trichomonas vaginalis- Positive predictive value of 40% in an average risk population
2) Candida - Sensitivity of pap smear compared with culture is about 50%
3) Predominance of coccobacilli consistent with the shift in vaginal flora-suggestive of bacterial vaginosis.
4) Bacteria morphologically consistent with actinomyces species

   They are best recognized on cytological smear by branching gram-positive filaments their presence is strongly associated with presence of an intrauterine contraceptive device
5) Amoeba have been found in association with the presence of an IUD which is Eubacterium nodatum which mimics actinomyces

Reparative or reactive changes

Reparative processes are often encountered

1) With estrogen deficiency
2) Surgery
3) Radio therapy
4) Intercourse

5) IUD users

Epithelial cell abnormality

1) ATYPICAL SQUAMOUS CELLS

- as of undetermined significance (ASC-US)
- as suggestive of a high grade squamous intra epithelial lesion (ASC- H)

2) LOW GRADE SQUAMOUS INTRAEPITHELIAL LESION (LSIL)

LSIL is most prevalent in women in this early reproductive years (16 to 26 years) The cytological abnormal squamous cells that are equivalent in size to a normal superficial or intermediate cell. Diagnostic abnormalities include enlargement of the nucleus, irregularity of the nuclear membrane and irregular chromatin distribution.

3) HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION (HSIL)

HSIL is most prevalent in women in their mid to late reproductive years (26 to 48 years) The cytologic diagnosis of HSIL relies on the presence of abnormal squamous cells that are smaller than those seen in LSIL. The average size of a high grade squamous intraepithelial lesion is equivalent to that of a normal parabasal cells. Diagnostic abnormalities include nuclear enlargements, marked increase in nuclear to cytoplasmic ratio, irregularity of the nuclear membrane and irregular chromatin distribution.

4) GLANDULAR CELLS

Endometrial cells, Cytologically benign in postmenopausal women.

Atypical glandular cells of undetermined significance

Endo-cervical adenocarcinoma

PAP STAINING PROCEDURE

The slides are removed from the fixative (95% ethyl alcohol and then dehydrated by successively transferring them to

- 80% ethyl alcohol 10 dips
- 70 ethyl alcohol 10 dips
- 50% ethyl alcohol 10 dips
- Distilled of filtered Tap water 10 dips
- Harish or Ehrlich haemotoxylin - 3 to 6 minutes , tap water rinse
- Sodium actate buffer 1-4 quick dips, with tap water.
- 1% saturated acqueous lithium carbonate – 2 min tap water – 4 min
- Orange G staining after immersion in increasing strength of ethyl alcohol 50% - 70% 80% 95%
- Eosin azure EA 65 after subjecting them to ethyl alcohol ethyl alcohol and absolute alcohol
- Xylol essential for microscopic works on smears

CELL COMPONENTS IN A PAP SMEAR

Basal cells - rarely seen except in atrophic vagina. Small round cells with smooth border and a central round nucleus

Parabasal cells - uniform round cells with a thick blue or green cytoplasm. Large central round nucleus

Intermediate cells - polyhedral cells with thin semitransparent pink to blue cytoplasm and central large vesicular nucleus. A folding or curling tendency of the edges (navicular cells) is seen in pregnancy.

Superficial cells - most common and largest epithelial cells in a pap smear. Polyhedral cells with a thin homogenous cytoplasm pink to orange (if keratin is present). Nucleus is central and pyknotic.

Endocervical ciliated or nonciliated cells, endometrial cells can also be seen depending on the site of collection.

Pap smear and cancer screening

Precursor changes in the uterine cervix are dysplasia and carcinoma in situ. Invasive cervical cancer is a slow and predictable process. Pap smear is a standard effective method of screening for malignant cells.

For an accurate interpretation of the smear the sample should be adequate. Satisfactory smears should fulfill-patient and specimen identity, pertinent clinical details, technically good sample and proper cellular composition, cervical transformation Zone should be present.

The most common reason for an unsatisfactory sample is scant cellularity and obscuring inflammation and blood.

MOUNTING

The slide in mounted and a cover slip affixed

Mounting Material – Canada Balsam

SMEAR INTERPRETATION

Success depends on

1.Excellence of preparation

2.Skill training & application of the interpreter

3.Excellence of Equipment

CERVICAL BIOPSY

A cervical biopsy is a procedure performed to remove tissue from the cervix to test for abnormal or precancerous conditions, or cervical cancer.

There are several types of cervical biopsies. In addition to removing tissue for testing, some of these procedures may be used to completely remove areas of abnormal tissue and may also be used for treatment of precancerous lesions.

Types of cervical biopsies include:

- **Punch biopsy** - a surgical procedure to remove a small piece of tissue from the cervix. One or more punch biopsies may be performed on different areas of the cervix.

cone biopsy or conization - a surgical procedure that uses a laser or scalpel to remove a large cone-shaped piece of tissue from the cervix

SOME OF THE STUDIES OF VISUAL INSPECTION WITH ACETIC ACID AND LUGOL'S IODINE

1.Study conducted at department of Obstetrics and Gynecology, Fatima Jinnah Medical College, Lahore involving 501 women for comparison of visual inspection of cervix and Pap smear for cervical cancer screening . Of these 156 subjects were positive with VIA (28.96 %) while pap smear was positive in 78 cases (14.4%) . The accuracy of VIA was 77.5% compared to 52.8% pap smear. They concluded that VIA was more sensitive & highly specific.[8]

2. University of Zimbabwe/JHPIEGO Cervical Cancer Project conducted a study in 1090 women to compare VIA with Cytology. They concluded that VIA was highly sensitive and could be valuable in detection of precancerous lesions of the cervix but emphasis to increase the specificity of VIA was made.[31]

3. Department of Obstetrics and Gynecology, Maulana Azad Medical College, New Delhi conducted a study in 400 women to evaluate the efficacy of VIA / Cytology in Cancer cervix screen. They concluded that Visual inspection with acetic acid was very sensitive for ectocervical lesions and its immediate results help to see and treat at the first visit.[34]

4. A study conducted by Department of Obstetrics and Gynecology, Johns Hopkins Medical Centre,Baltimore,MD 21224,USA.[Blumenthal PD,Gaffikin L, Chirenje ZM,McGrath J,Womack S.Shah K using 2199 women to detect cancer cervix using visual inspection methods HPV and Pap smear. It was shown that in countries with limited resources but with the capacity for HPV testing, sequential testing involving the use of VIA followed by HPV could yield fewer false positives than the use of VIA alone.[24]

5. University Teaching Hospitals,Yaounde,Cameroon [Doh AS,Nkele NN. Achu Essimbi F,Essame o, Nkegoum conducted a study of 5010 women of 30-60 years to access the accuracy of visual inspection with acetic acid as a screening method for cervical lesions. Positive lesions were subjected to biopsy. They concluded that VIA has acceptable test qualities and may in low resource settings be implemented as a large scale screening method.[8]

6. Department of Obstetrics and Gynecology , Cleveland Clinic Foundation conducted a study with 1997 women of age 35-45 years to estimate the sensitivity & specificity of VIA and to use it as a primary screen for intraepithelial neoplasia. Visual inspection yielded normal results in 1445 women (72%,) low-grade intraepithelial neoplasia in 525 (26%) high-grade in 21 (1%) and cancer cervix in 6 (0.3%) . The sensitivity was 65% for smaller lesion & 89% for larger lesions. They concluded that VIA can be used as a screening modality in developing countries.[23]

7. The study conducted by Division of Cancer Epidemiology and Genetics, National Cancer Institute, Maryland,USA [Jeronimo J, Morales. Involving 1921 asymptomatic women compared the efficacy of VIA and Pap smear as a screening modality for detecting cancer cervix. They concluded that not only in low-resource settings but also in well equipped health centers VIA is a good screening modality.[4]

SUBJECTS AND METHODS

This was a prospective study conducted at Govt. Kasturbha Gandhi hospital, Chennai, at the department of obstetrics and gynecology attach to Madras Medical College, from October 2003 to March 2006.

This study comprised of study subject [n=500] asymtomatic women who were screened for cancer cervix using visual inspection with acetic acid and lugol iodine and papsmear cytology.

INCLUSION CRITERIA :

1) Non pregnant women

2) Women with no symptoms like vaginal discharge, pain, ulcers etc

3) Both multi para & nully para

4) Women accompanying the patients and those attending medical Out patient department

EXCLUSION CRITERIA:

1) women with symptoms like vaginal discharge,pain,ulcers etc.

2) Pregnant women

3) women during menstruation

4) women with intra vaginal medications

VISUAL INSPECTION WITH ACETIC ACID (VIA) & WITH LUGOL'S IODINE (VILI)

THE EXAMINATION :

- The procedure is carefully explained to the women, made comfortable and privacy ensured.
- The patient placed in the lithotomy position.
- Good visualization is ensured.
- Any abnormal findings in the external genitalia is observed and recorded.
- Cusco's speculum inserted into the vagina and the speculum is opened so as to get a clear view of cervix.
- Excess mucus or discharge is cleaned with a cotton swab soaked in normal saline solution.
- Any abnormal findings noted.
- cervix washed with freshly prepared 5% acetic acid using a syringe. (Alternatively can be applied with cotton swab)
- Waited for approximately one minute
- The cervix noted for acetowhite areas.
- Lugol's Iodine applied and waited for one minute
- The cervix inspected for iodine uptake areas & non uptake areas

- Findings were recorded.

CHARATERSTICS OF VIA / VILI –POSITIVE CASES

Low grade lesion

Detection of any acetowhite area – VIA

Detection of any Non iodine takeup areas – VILI.

(A) High Grade Lesion

Detection of well defind, opaque acetowhite lesions close to or touching squamocolumnar junction.

Detection of dense, thick, bright mustard yellow or saffron yellow iodine non-uptake areas in tranformation zone close to abutting the squamocolumnar juction.

REFERRAL PROTOCOL

1. **VIA Negative / VILI Negative (Normal cervix)**

   Follow-up after 3-5 years according to the decided policy. Advice to come back if symptoms develop.

2. **VIA Positive / VILI Positive (Abnormal Cervix)**

   If Infection is suspected take a swab and send for microbiological analysis.

   If signs of infection is present, treat the patient accordingly and re examine.

PAP SMEAR

Timing

- Smears are not collected during the menstrual periods.
- The patient should not have intravaginal medications / douches 48 hrs before the test
- Intercourse not recommended on the night before or day of examination
- Post partum smears after 6 to 8 wks to avoid reparative / inflammatory changes

Precautions

- Lubricants of all types avoided
- Vaginal examination to be done only after taking smear

Method

- Combination of Ayre's Spatual and Endocervical brush for sampling endocervix has been shown to be more superior.
- The patient is put in lithotomy position
- Visualisation of cervix by Cusco's speculum
- The spatula placed at the level of cervical os and rotated through 360° circle around the os maintaining contact with ectocervix
- Optimal sample is held and smeared on the slide.

- Endocervical brush is than inserted into the os and rotated through 180°. More than 180° causes bleeding. The angle of rotation should be parallel to the endocervical canal
- The sample is rolled on to the slide in the opposite direction to that which was used for collecting the sample.
- The quality of the smear can be improved by using spatula first followed by endocervical brush because fewer smears will be obscured by blood.

The slide is with fixed with 95% ethyl alcohol – Fixative

PAP REPORTING IN THE HOSPITAL

1. Normal Studies
2. Inflammatory Pathology
3. Atypical cells / Low grade lesion
4. High grade lesion

CERVICAL BIOPSY

For VIA Positive 172 cases and VIA Negative 50 cases (Control) punch biopsy was taken at 1 or several points and sent for histopathological report. The biopsy reporting in our hospital is as follows.

No major lesion detected

1. Inflamatory
2. Mild Dysplasia
3. Moderate dysplasia
4. Severe dysplasia, Carcinoma in situ
5. Invasive Carcinoma

RESULTS AND ANALYSIS

The study was conducted of Govt. Kasturbha Gandhi Hospital for Women & Children, Chennai, attach to Madras Medical College during the period October 2003 – March 2006.

500 Patients were included in the study group and the outcome analysed using various parameters. The results were subjected to statistical analysis.

- Sample Size – 500
- Visual Inspection with Acetic Acid (VIA), done in all 500 patients.
- Visual Inspection with Lugol's Iodine (VILI) done in all 500 patients .
- Papsmear cytology was done in all 500 cases.
- Those cases showing VIA/VILI Positive (or) cytology positive were subjected to cervical biopsy.
- For 50 VIA Negative cases, biopsy was done (as control)

I CHARACTERISTICS OF STUDY GROUP

1) TABLE - 1

AGE DISTIBUTION OF STUDY GROUP

AGE

n= 500

Age(years)	<20	21-30	31-40	41-50	51-55
Frequency	12	139	300	40	9
Percent	2.4%	27.8%	60%	8	1.8

- Majority of patients belonged to 30 -40 yrs age group (60%)

ii) TABLE –2

DISTRIBUTION OF SOCIOECONOMIC GROUP - STUDY

n=500

GRADES	2	3	4	5
Frequency	55	117	174	154
Percent	11%	23.4%	34.8%	30.8%

Most of the patients belonged to socioeconomic category 3 (or) 4

iii) TABLE – 3

DISTRIBUTION OF AGE AT MENARCHE-STUDY GROUP

n=500

Age (years)	<12	12-14	14-16	>16
Frequency	10	280	20 5	5
Percent	2%	56%	41	1

- 56% of the study group attained menarche by 12-14 years

iv) TABLE – 4

DISTRIBUTION OF AGE AT MARRIAGE – STUDY GROUP

n=500

Age(years)	15-20	21-25	26-30
Frequency	262	151	87
Percent	52.4%	30.3%	17.3%

Most of the marriages in this study group were around 18-20 years (50%)

iv) TABLE – 5

DISTRIBUTION OF STUDY GROUP ACCORDING TO PARITY

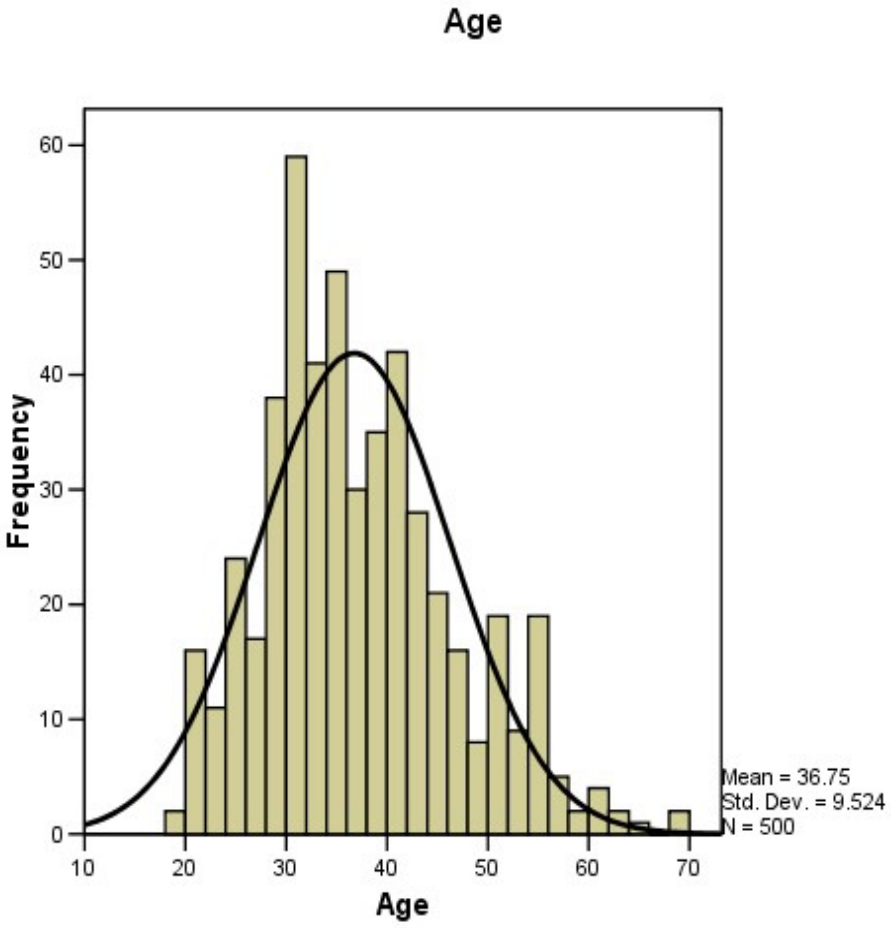
n=500

Parity	1	2	3	4	5
Frequency	32	174	224	53	17
Percentage	6.4	34.8	44.8	10.6	3.4

- Most of the patients in this study group belong to the parity group 3 (45%)

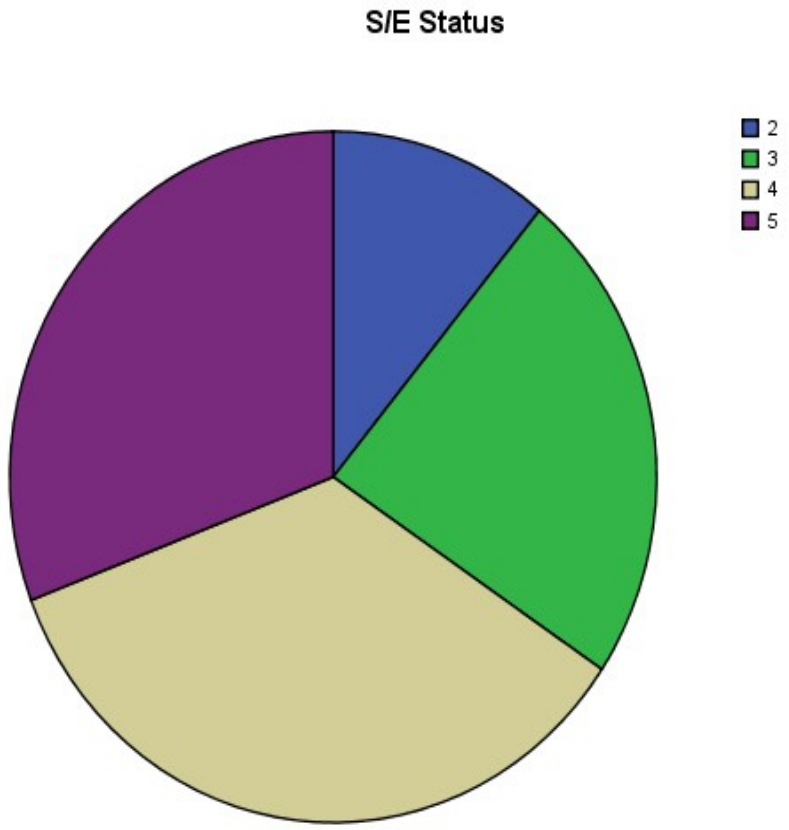
DISTRIBUTION OF AGE IN THE STUDY GROUP

{n=500}



mean = 36.75 standard deviation = 9.524 n= 500

SOCIO ECONOMIC STATUS DISTRIBUTION IN THE STUDY GROUP {n=500}



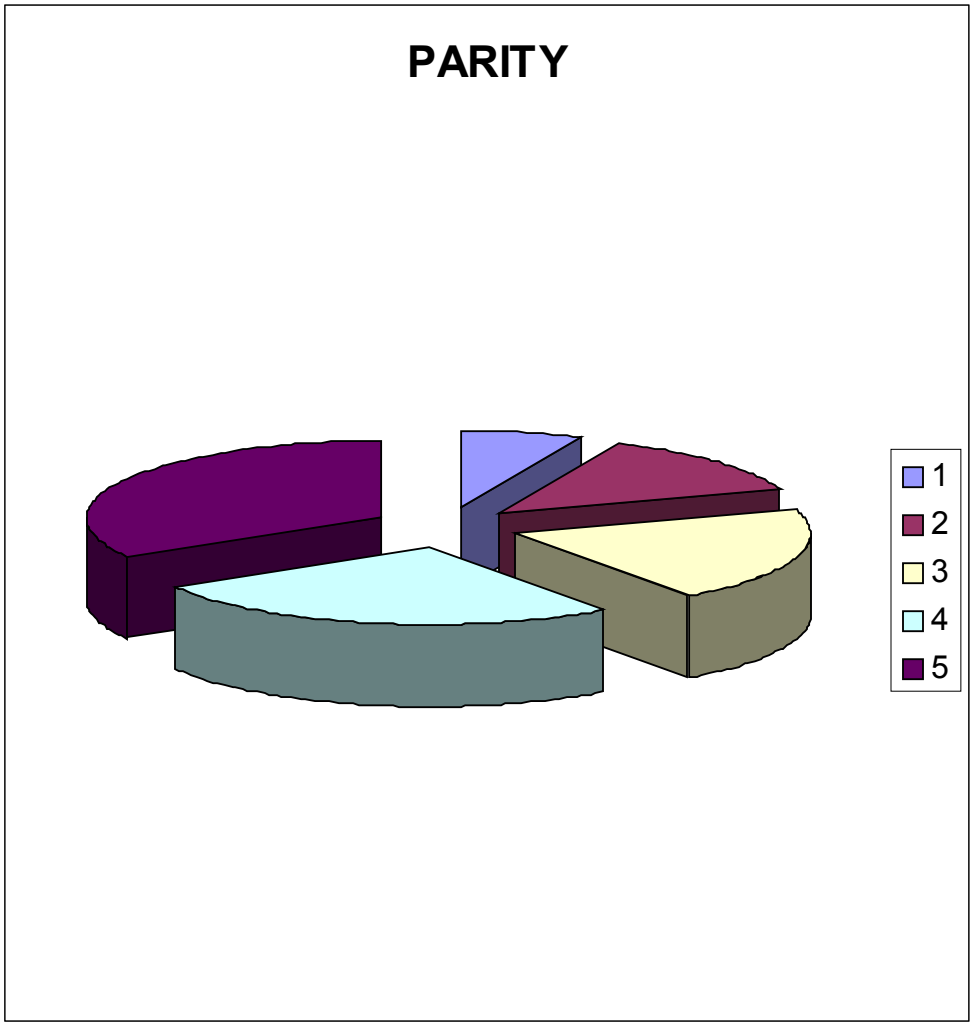
No of cases belonging to grade 2 -55 cases

No of cases belonging to grade 3 -117 cases

No of cases belonging to grade 4 -174 cases

No of cases belonging to grade 5 -154 cases

DISTRIBUTION OF PARITY IN THE STUDY GROUP {n=500}



No of cases having 1 children -32 cases

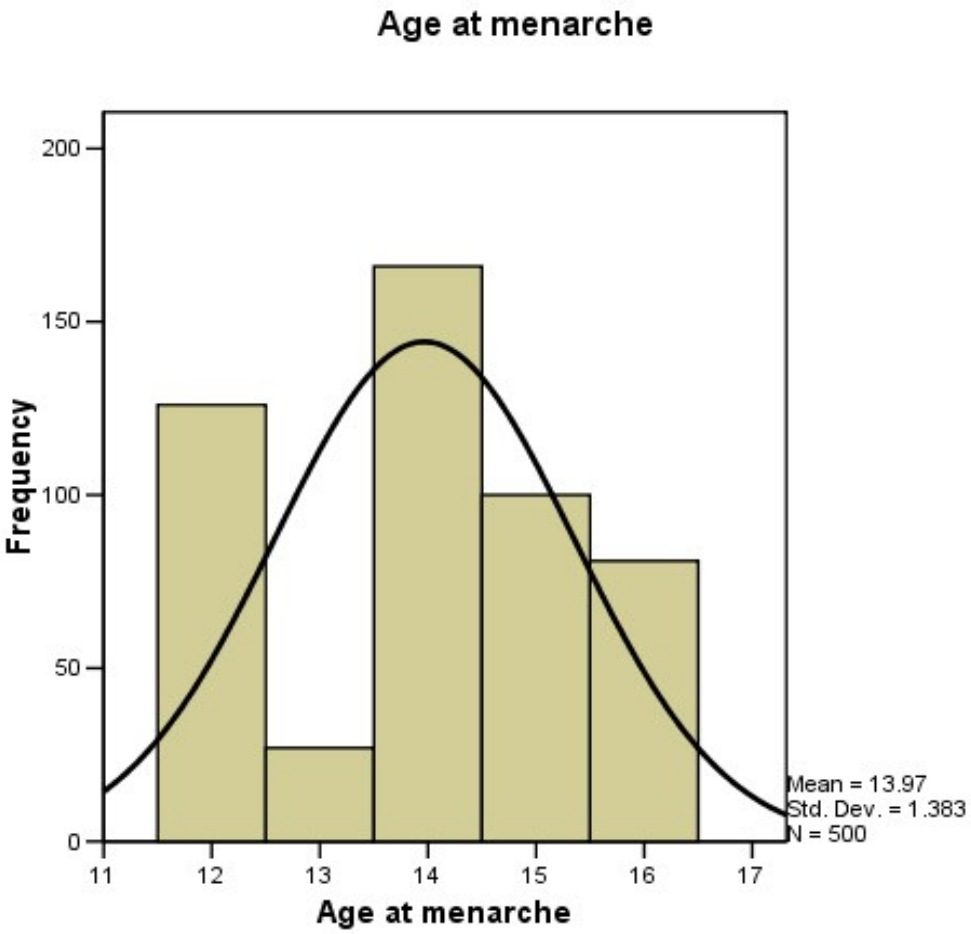
No of cases having 2 children -174 cases

No of cases having 3 children - 224 cases

No of cases having 4 children -53 cases

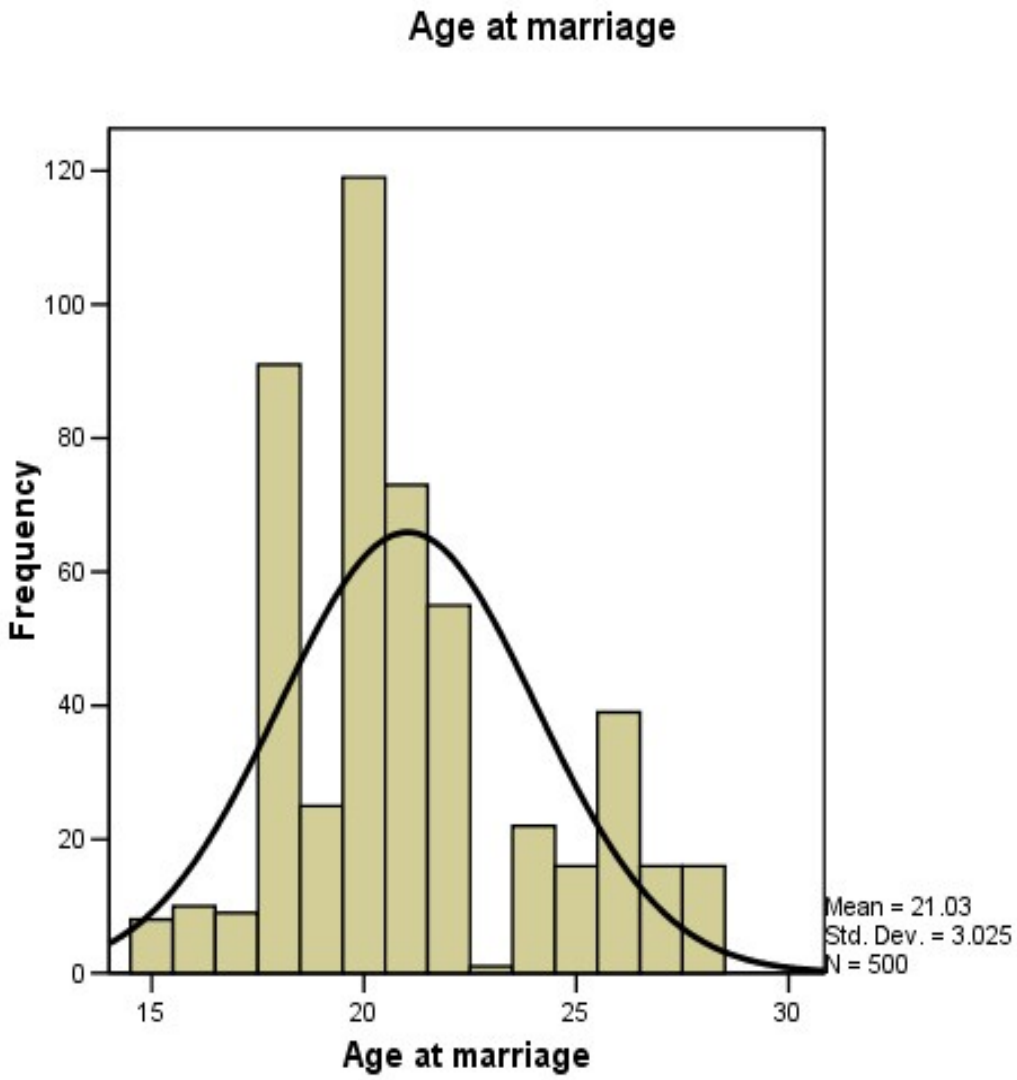
No of cases having 5 children -17 cases

DISTRIBUTION OF AGE AT MENARCHE IN THE STUDY GROUP {n=500}



mean = 13.97 standard deviation = 1.383 n= 500

DISTRIBUTION OF AGE AT MARRIAGE IN THE STUDY GROUP {n=500}



mean = 21.03 standard devation = 3.025 n= 500

II RESULTS OBTAINED BY SCREENING METHODS

FINDINGS IN VISUAL INSPECTION OF CERVIX WITH ACETIC ACID (VIA) AND WITH LUGOL'S IODINE (VILI)

-All patients in the study group (500 cases) underwent direct visualization of cervix, followed

by visual inspection with acetic acid and Lugols Iodine

VIA &VILI +ve	**172 cases**	**34%**
VIA &VILI -ve	**378 cases**	**66%**

i) TABLE – 1

AGE WISE DISTRIBUTION

n=172 (VIA +ve cases)

Age(years)	<20	21-30	31-40	41-50	51-55
VIA and VILI positive	3	49	97	20	3
Percent	1.7%	28.4%	56.6 %	11.6%	1.7%

Most of the patients with VIA and VILI +ve belong to age group 31-40 years (56 %)

ii) TABLE – 2

- VILI /VIA RESULTS – SOCIO ECONOMIC STATUS WISE

n=172 (VIA positive cases)

SocioEcon Status – Grade	2	3	4	5
VIA Positive and VILI Positive	17	35	63	57

cases				

Most of the patients with VIA and VILI +ve belong to socio economic group 3 and 4

iii) TABLE – 3

- **VILI / VIA RESULTS – AGE AT MENARCHE /**

  N=172 (VIA positive cases)

Age (years)	<12	12-14	14-16	>16
Frequency	4	100	66	2

Most of the patients with VIA and VILI +ve attained menarche at 12-14 years

2). CYTOLOGY (PAP SMEAR) REPORTS:

Pap smear was taken using Ayer's spatula and endocervical brush in all 500 women.

Cytology Findings Were :

Findings	No. of Cases	Percentage
No major lesion detected	266 Cases	(53.2%)
Inflammatory	222 Cases	(44.4%)
LSIL / Atypical	8 Cases	(1.6%)
HSIL	4 Cases	(0.8%)

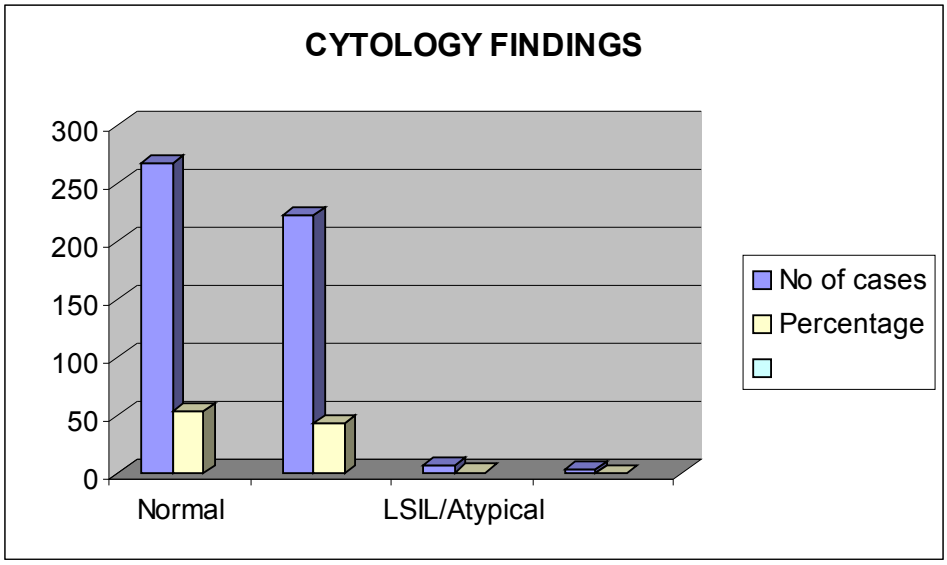
(iii) Biopsy Findings :

Biopsy done in 222 Cases findings were :172 VIA +ve cases 50VIA –ve cases

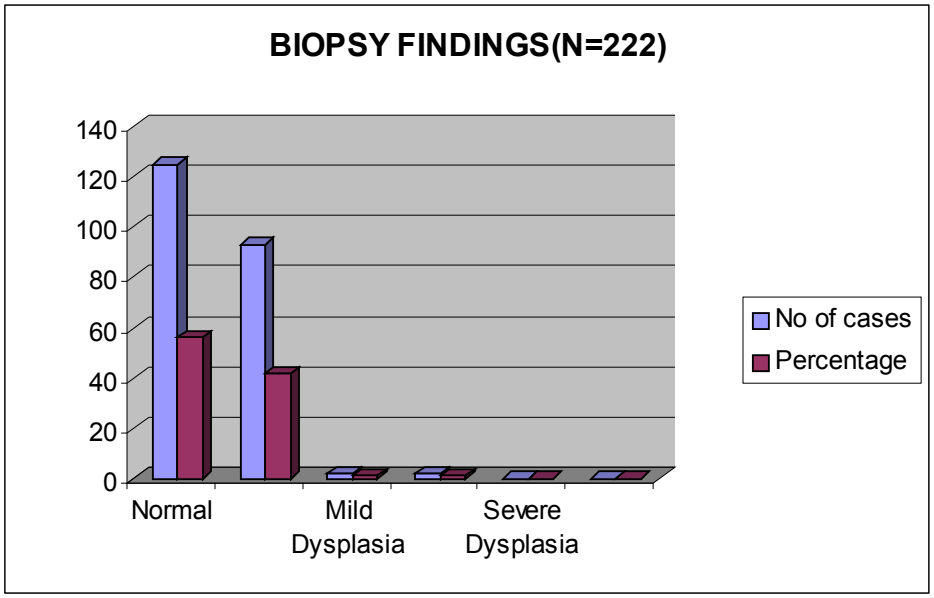
Findings	No. of Cases	Percentage
No major lesion detected	125 Cases	(56.3%)

Inflammatory	93 Cases	(41.8%)
Mild Dysplasia	2 Cases	(0.9%)
Moderate dysplasia	2 Cases	(0.9%)
Severe dysplasia	0	0
Invasive Carcinoma	0	0

N=500



Findings	No of cases	Percentage
No major lesion detected	266	53.2
inflammatory	222	44.4
LSIL/Atypical	8	1.6
HSIL	4	0.8



Findings	No of cases	Percentage
No major lesion detected	125	56.3
Inflammatory	93	41.8
Mild Dysplasia	2	0.9
Moderate Dysplasia	2	0.9
Severe Dysplasia	0	0
Invasive Carcinoma	0	0

COMPARISON STUDIES

i) VIA WITH BIOPSY

VIA&VILI Test Results	Mild Dysplasia	Moderate dysplasia	Severe Dysplasia	Inv carcinoma	Inflam	No major lesion detected	Total
+ve	1	2			69	100	172
- ve	1				24	25	50
				Total	93	125	222

Sensitivity = 98.9%

Specificity = 39.2%

The positive predictive value = 55.8%

The negative predictive value = 98%

False Positive Percentage = 25%

False Negative Percentage = 75%

(ii) CYTOLOGY WITH BIOPSY

Papsmear Test Results	Mild Dysplasia	Moderate dysplasia	Severe Dysplasia	Inv carcinoma	Inflam	No major lesion detected	Total
+ve (major lesions)	1	2			9	-	12
_ve (no major lesions)	1				120	39	160
	2	2			129	39	172

sensitivity = 3/4 x 100 = 75%

Specificity = 159/168 x 100 = 94.6%

The positive predictive value	=	3/12 x 100	=	25%
The negative predictive value	=	159/160 x 100	=	99.3%
False Positive Percentage	=	53%		
False Negative Percentage	=	25%		

DISCUSSION

This prospective, descriptive comparative study analysis the efficacy of visual inspection methods (VIA/VILI) with cytology and to choose VIA and VILI as an easly interpretable low cost but effective method for cancer cervix

1. CHARACTERISTICS OF STUDY GROUP

- Most of the were the age group 30 to 40 years (60%)
- Most of the patients where in the socioeconomic group 3 (23.4% and group 4 (34.8%).
- Most of the patients attained menarche at 12-14 yrs (50%).
- Most of them got married at 18-20 yrs (60%).

In the cross sectional screening test done in October 1995 to August 1997women attending 15 primary health center in Zimbabwe (10,000 study group age group included was 25 to 55 years the efficacy of VIA and cytology in the study group the mean age was 33.25%. Most of the patients were belonging into status 3. 56% attained menarche at 13 years and most of the got married at 18 years (46%).

2. VISUAL INSPECTION FINDINGS-VIA AND VILI

All patients were subjected to visual inspection with acetic and lugo's iodine.

VIA and VILI positive in 172 cases and in the remaining the test results were negative.

Thus 34% of the screening population showed positive results

The above findings correlated with the study conducted by Shankara Narayanan et al, in Kolkatta involving 5881 women which showed VIA positive results in 30% .

Also in another study by Tayyeb etal, VIA was positive in 28.6% of the cases.

PAP SMEAR CYTOLOGY FINDINGS

All patients were subjected to pap smear cytology.

There were 206 cases (53.2%) with no detectable lesion findings,222 Cases showed inflammatory findings (44.4%), 8 Cases (1.6%) showed LSIL / Atypical changes , 4 cases (0.8%) showed HSIL changes in 4 cases

The 8 cases of LSIL / Atypical group (6 LSIL, 2 Atypical) were subjected to biospy and the results were chronic non – specific cervicitis for all of them and they were followed up.

Among the 4 cases of HSIL 1 Cases showed mild dysplasia and two cases moderate dysplasia. For the 2 cases of moderate dysplasia the options of less invasive methods like conization and large loop excision were given but the two patients were belonging to poor socio economic status and coming from a longer distance. Hence the patient could not come for follow up. So the patient underwent hysterectomy. The biopsy results of the 2 of the Two hysterectomy specimens were also the same (Moderate Dysplasia). Case with mild dysplasia was followed up. 1 Case of inflammatory finding by Cytology showed mild dysplasia and was followed up.

The above findings were similar to the finding in the study conducted by Belinson J.L. et al. In 1997,

whose findings were normal (55.2%) inflammatory findings (42.4%), LSIL / Atypical changes (1.4%), HSIL (1%)

BIOSPY RESULTS

Biospy was performed in 222 case(172 VIA +ve cases and 50 VIA –ve cases). It showed normal findings in 125 cases (56.3%), inflammatory findings in 93 cases (41.8%), Dysplasia changes (mild dysplasia 2 cases – (0.9%), moderate dysplasia (0.9%). There were no cases of severe dysplasia, carcinoma in situ, invasive carcinoma.

In the study conducted by Longatto filho et al in 2005 involving 10,000 women, the results of biospy were 2500 normal cases (54%) 1860 inflammatory (42%), dysplasia in 80 cases (4%) (mild dysplasia 2%) moderate dysplasia (2%). [27]

COMPARISON OF VIA RESULTS WITH BIOPSY

172 VIA positive cases and 50 VIA negative cases were subjected to biopsy. The test results were calculated and it was found that sensitivity was 98.9% ,specificity was 39.2 %,positive predictive value was 55.8% and negative predictive value was 98%.This can be compared with the following studies by :

- Blumenthal Pd et al- sensitivity 96%,specificity 60 %,positive predictive value 65%,negative predictive value 92% [24]

- Singh et al- sensitivity 80%,specificity 60 %,positive predictive value 60%, negative predictive value 90% [25]
- Siddiqui M et al - sensitivity 60%,specificity 40 %,positive predictive value 65%, negative predictive value 98% [23]
- Rajkumar et al,- sensitivity 93.4%,specificity 66 % [31]
- Malik N et al - sensitivity 93.%,specificity 30.4 %,positive predictive value 60%, negative predictive value 96% [29]

COMPARISON OF PAP SMEAR RESULTS WITH BIOPSY

All VIA positive patients were subjected to Pap smear and biopsy.The sensitivity of pap smear in this study was 75%,specificity 94.6 %,positive predictive value 25%, negative predictive value 96%,false positive values 53%, false negative values 25%.

- The above results correlates with the study by Bhambani et al where sensitivity was 76%,specificity 95 %,positive predictive value 25%, negative predictive value 96% [27]
- In another study by Demy et al sensitivity was 76% , specificity 95 %,positive predictive value 25%, negative predictive value 30% [28]

Finally when comparing the efficacy of visual inspection studies with acetic acid and lugol's iodine with pap smear cytology:

Sensitivity for VIA was 98.9 %, pap smear cytology 75%

Specificity for VIA was 39.2%, pap smear cytology 94.6%

positive predictive value for VIA 55.8%, pap smear cytology 25% Negative predictive value 98%,

pap smear cytology 25%

VIA and VILI has a higher sensitivity than pap smear.The specificity for VIA is less than that of pap smear.Hence visual inspection of cervix with acetic acid and lugol's iodine can be used as an alternative strategy to papsmear cytology in a country like ours where adequate cytologists are not available.

SUMMARY

This is the study conducted at Kasturbha Gandhi Hospital for women and children to study the efficacy of visual inspection of cervix with acetic acid and lugol's iodine in cervical

cancer screening and to use it as an alternative strategy to papsmear in low resource country like India.

Totally 500 cases were studied,most of them belonging to 30-40 yrs and socioeconomic status 3 0r 4.

172 cases were positive by visual inspection studies (VIA/VILI) almost 30 %.

When these same 172 cases were subjected to biopsy , 1 case mild dysplasia, 2 cases of moderate dysplasia were reported showed .For 50 VIA negative cases biopsy was done and 1 case showed mild dysplasia and 49 cases were normal.The sensitivity calculated for visual inspection methods were sensitivity 98.9%,specificity 32.9%,positive predictive value 55.8% ,negative predictive value 98 %.

2 cases of mild dysplasia was followed up and the 2 cases of moderate dysplasia underwent hysterectomy and the histopathological findings were also the same.

VIA and biopsy was found significant at 0.000

Among the pap smear cytology results there were 53.2 % normal finding,44.4 % inflammatory finding,1.6 % LSIL/Atypical(6 cases LSIL ,2 cases Atypical),HSIL 0.8 %(4 cases).All the LSIL and Atypical cases underwent biopsy and was found to be chronic non specific cervicitis.These cases were followed up.The 4 HSIL cases were subjected to biopsy,2 showed mild dysplasia,2 moderate dysplasia .

The sensitivity for papsmear in this study was 75%,specificity 94.6%,positive predictive value 25 %,negative predictive value 99.3 %.

Thus the sensitivity for visual inspection studies was greater than that of papsmear cytology. Thus in a low resource country like ours where adequate number of cytologists are not available visual inspection with acetic acid and lugol's iodine can be used as an effective screening technique for cervical cancer.

CONCLUSION

- **Visual inspection under Acetic Acid & Lugol**
- **Smple and easy**
- **Minimally dependent on infrastructure**
- **Low startup and sustaining cost**
- **Results available immediately**
- **May be possible to integrate into primary health care**
- **Can be done by paramedical trained staff**
- **It is effective and can be used as an alternate strategy in low resource settings where screening for cancer cervix by pap smear is not always possible due to inadequate cytologists.**

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PROFORMA

NAME **AGE** **OP/IP NO**

OCCUPATION

SOCIOECONOMIC STATUS

ADDRESS

AGE AT MENARCHE

AGE AT MARRIAGE

PARITY

LCB

H/O SEXUALLY TRANSMITTED DISEASE

PAST H/O HT/DM/ASTHMA/EPILEPSY/ TB

PAST H/O SURGERY (ABDOMINAL)

CONTRACEPTIVE HISTORY

PERMANENT / TEMPORARY

-STERILISATION: Puerperal Sterilisation

Trans abdominal tubectomy – {Interval or
Lap sterilization concurrent with MTP }
Caesarian section with sterilization

GENERAL EXAMINATION

HEIGHT

WEIGHT

BUILD / NOURISHMENT

ANEMIA JAUNDICE

THYROID BREAST

VITALS SIGNS PULSE RATE BP RESPIRATORY RATE TEMP

SYSTEMIC EXAMINATION

CARDIOVASCULAR SYSTEM

RESPIRATORY STYSTEM

ABDOMINAL EXAMINATION

SPECULUM EXAMINATION

VISUAL INSPECTION WITH ACETIC ACID

VISUAL INSPECTION WITH LUGOL'S + IODINE

PAPSMEAR CYTOLOGY

BIOPSY

REPORT

FOLLOW UP ACTION

MASTER CHART

MASTER CHART FOR 500 STUDY CASES

Sl.No	Name	IP.OP/No	Age	S/E Status	Age at menarche	Age at marriage	Parity	VIA	VILI	Cytology	Biopsy
1	Kasthuri	11774	50	4	13	18	4	(+) ve	(+) ve	INFLAM	INFLAM
2	Vimala	11723	36	5	15	20	2	(-) ve	(-) ve	INFLAM	-
3	Raj Govind	57665	45	3	12	23	2	(-) ve	(-) ve	INFLAM	-
4	Sharmila	49962	29	4	16	21	2	(-) ve	(-) ve	NORMAL	NORMAL
5	Sumithra	49863	34	4	14	18	2	(-) ve	(-) ve	INFLAM	-
6	Vijayalakshmi	48694	34	3	14	25	2	(-) ve	(-) ve	INFLAM	-
7	Manimekalai	51960	22	5	12	16	3	(-) ve	(-) ve	NORMAL	-
8	Usha	52266	26	5	14	17	2	(-) ve	(-) ve	INFLAM	-
9	Saroja	48014	48	3	15	21	2	(-) ve	(-) ve	ATYPICAL	INFLAM
10	Paer	51439	32	4	12	18	2	(-) ve	(-) ve	INFLAM	-
11	Sarasu	51800	40	5	15	19	5	(+) ve	(+) ve	LSIL	INFLAM
12	Jaya	54046	38	2	16	22	2	(-) ve	(-) ve	NORMAL	-
13	Shanthi	8462	40	5	15	21	1	(-) ve	(-) ve	NORMAL	-
14	Kasthuri	5487	31	4	14	20	3	(-) ve	(-) ve	NORMAL	-
15	Idayanthi	56493	35	3	12	18	2	(-) ve	(-) ve	NORMAL	NORMAL
16	Manohari	53122	50	4	14	20	1	(+) ve	(+) ve	INFLAM	INFLAM
17	Shaila Banu	55469	32	2	14	20	2	(-) ve	(-) ve	NORMAL	-
18	Maniam	56779	25	5	15	21	1	(-) ve	(-) ve	NORMAL	-
19	Saraswathi	56702	45	4	12	18	3	(-) ve	(-) ve	NORMAL	-
20	Jaya chitra	56853	30	2	13	19	1	(+) ve	(+) ve	NORMAL	NORMAL
21	Kasthuri	45110	31	3	16	22	2	(+) ve	(+) ve	INFLAM	INFLAM
22	Vijayalakshmi	56891	34	4	16	19	4	(+) ve	(+) ve	INFLAM	INFLAM
23	Gomathi	56082	30	5	15	21	4	(-) ve	(-) ve	NORMAL	-
24	Pilomina	57360	50	3	14	20	3	(-) ve	(-) ve	NORMAL	-
25	Shanthi	54865	30	5	12	18	2	(-) ve	(-) ve	NORMAL	-
26	Parvathi	56831	30	5	14	20	1	(+) ve	(+) ve	NORMAL	INFLAM
27	Sakunthalai	58301	53	4	12	18	2	(-) ve	(-) ve	NORMAL	NORMAL
28	Saraswathi	51933	27	3	14	20	3	(-) ve	(-) ve	NORMAL	-
29	Assuer Bee	57538	33	4	14	20	1	(+) ve	(+) ve	INFLAM	INFLAM
30	Yamuna	54091	20	2	15	15	4	(+) ve	(+) ve	NORMAL	NORMAL
31	Kaniga	58899	26	5	12	26	2	(+) ve	(+) ve	NORMAL	NORMAL
32	Noorjahan	56944	43	4	13	25	1	(-) ve	(-) ve	NORMAL	-
33	Sumathi	59375	43	3	16	16	5	(-) ve	(-) ve	NORMAL	-
34	Tamilarasi	57013	42	2	16	17	1	(-) ve	(-) ve	NORMAL	NORMAL
35	Pattammal	58291	55	4	15	18	3	(-) ve	(-) ve	NORMAL	-

36	Amudha	55966	30	5	14	21	1	(+) ve	(+) ve	NORMAL	NORMAL
37	Subbu Lakshmi	57928	30	3	12	18	2	(-) ve	(-) ve	NORMAL	-
38	Yamuna	54091	20	4	14	22	3	(-) ve	(-) ve	NORMAL	-
39	Hemra	58591	45	5	16	21	1	(-) ve	(-) ve	NORMAL	-
40	Haspriyam	58598	35	3	15	20	2	(+) ve	(+) ve	NORMAL	NORMAL
41	Siva Kani	57678	28	5	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
42	Girija	60086	35	5	12	20	3	(-) ve	(-) ve	NORMAL	NORMAL
43	Sumathi	57472	27	4	13	20	2	(-) ve	(-) ve	NORMAL	-
44	Shanthi	8462	36	3	12	21	4	(-) ve	(-) ve	NORMAL	-
45	Nirmala	43026	30	3	16	18	2	(-) ve	(-) ve	NORMAL	NORMAL
46	Saraswathi	48528	55	4	15	19	1	(+) ve	(+) ve	NORMAL	NORMAL
47	Devi	32182	35	2	14	22	3	(-) ve	(-) ve	NORMAL	-
48	Sarala	55525	30	5	12	22	1	(-) ve	(-) ve	NORMAL	-
49	Saroja	48014	48	4	14	21	2	(+) ve	(+) ve	INFLAM	INFLAM
50	Aruna	61371	35	3	12	20	3	(+) ve	(+) ve	NORMAL	NORMAL
51	Vasantha	61376	32	4	16	18	4	(-) ve	(-) ve	NORMAL	-
52	Vasanthi	61353	45	2	15	20	3	(-) ve	(-) ve	NORMAL	-
53	Kuppammal	61346	36	5	14	21	2	(-) ve	(-) ve	NORMAL	-
54	Mohana	61357	47	4	12	20	1	(-) ve	(-) ve	NORMAL	NORMAL
55	Kasthuri	9480	31	3	14	18	5	(-) ve	(-) ve	NORMAL	-
56	Jayanthi	61353	39	5	15	20	3	(+) ve	(+) ve	INFLAM	INFLAM
57	Megala	61206	40	4	12	20	1	(-) ve	(-) ve	NORMAL	-
58	Anjali	643761	36	5	16	21	2	(-) ve	(-) ve	NORMAL	-
59	Mamudha	61307	41	3	15	18	1	(-) ve	(-) ve	NORMAL	-
60	Rani	60856	34	5	14	19	2	(+) ve	(+) ve	NORMAL	NORMAL
61	Selvi	61329	29	5	12	22	1	(+) ve	(+) ve	NORMAL	NORMAL
62	Vasantha	58661	32	4	14	22	3	(-) ve	(-) ve	NORMAL	-
63	Gomathi	61390	32	3	12	21	1	(-) ve	(-) ve	NORMAL	-
64	Rukmani	61378	55	4	13	20	2	(-) ve	(-) ve	NORMAL	-
65	Nirmala	61324	53	4	14	18	3	(-) ve	(-) ve	NORMAL	NORMAL
66	Pilomina	57360	50	3	15	20	2	(+) ve	(+) ve	INFLAM	INFLAM
67	Devi	61336	39	5	12	18	3	(-) ve	(-) ve	NORMAL	-
68	Prema	61328	30	5	16	20	2	(-) ve	(-) ve	NORMAL	-
69	Rajeswari	61347	46	4	15	20	1	(-) ve	(-) ve	NORMAL	-
70	Malliga	57595	45	4	14	15	2	(+) ve	(+) ve	NORMAL	NORMAL
71	Abi Bee	59873	36	3	12	26	3	(+) ve	(+) ve	NORMAL	NORMAL
72	Kamini	61373	39	5	14	25	1	(-) ve	(-) ve	NORMAL	-
73	Renuka	61325	41	4	12	16	4	(-) ve	(-) ve	NORMAL	-
74	Bhuvaneswari	58437	46	5	13	17	2	(-) ve	(-) ve	NORMAL	-

75	Poorniammal	61388	29	3	12	18	1	(-) ve	(-) ve	NORMAL	NORMAL
76	Rukmani	61313	53	4	16	21	2	(+) ve	(+) ve	NORMAL	NORMAL
77	Yamuna	54091	20	5	15	18	5	(+) ve	(+) ve	INFLAM	INFLAM
78	Usha	61322	35	5	14	22	1	(-) ve	(-) ve	NORMAL	-
79	Sathyam	59841	32	4	12	21	2	(+) ve	(+) ve	INFLAM	INFLAM
80	Saroja	61396	39	4	14	20	3	(-) ve	(-) ve	NORMAL	-
81	Valliammal	61312	42	4	16	18	4	(+) ve	(+) ve	INFLAM	INFLAM
82	Tamilselvi	61178	46	2	15	20	3	(-) ve	(-) ve	NORMAL	-
83	Hesperuma	58598	48	5	14	20	2	(-) ve	(-) ve	NORMAL	NORMAL
84	Malliga	61151	41	4	12	21	1	(-) ve	(-) ve	NORMAL	-
85	Sasi kala	61408	39	3	14	18	2	(-) ve	(-) ve	NORMAL	-
86	Meena	61408	42	4	14	19	3	(+) ve	(+) ve	NORMAL	NORMAL
87	Saraswathi	61403	51	2	15	22	1	(-) ve	(-) ve	NORMAL	-
88	Kanniga	58899	41	5	12	22	4	(+) ve	(+) ve	INFLAM	INFLAM
89	Rajeswari	61417	30	4	16	21	2	(-) ve	(-) ve	NORMAL	-
90	Devi	61126	36	2	15	20	1	(+) ve	(+) ve	NORMAL	NORMAL
91	Fathima	61429	39	3	14	18	2	(+) ve	(+) ve	NORMAL	NORMAL
92	Geetha	53642	33	4	12	20	1	(-) ve	(-) ve	NORMAL	-
93	Malliga	61455	41	5	14	20	3	(-) ve	(-) ve	NORMAL	-
94	Kadar ali Pathima	51259	49	3	14	21	1	(-) ve	(-) ve	NORMAL	-
95	Sakunthalai	60595	51	5	15	18	2	(-) ve	(-) ve	NORMAL	-
96	Nagammal	61489	46	5	14	19	3	(+) ve	(+) ve	NORMAL	NORMAL
97	Poongodi	61412	24	4	12	22	1	(-) ve	(-) ve	NORMAL	-
98	Banu	61441	24	3	14	22	2	(-) ve	(-) ve	NORMAL	-
99	Indrani	61446	32	4	14	21	5	(+) ve	(+) ve	INFLAM	INFLAM
100	Malini	61451	39	2	12	20	3	(+) ve	(+) ve	NORMAL	NORMAL
101	Kamala	61245	48	4	16	18	2	(+) ve	(+) ve	INFLAM	INFLAM
102	Malar	61488	41	3	15	20	1	(-) ve	(-) ve	NORMAL	-
103	Suganthi	61458	52	5	14	21	2	(-) ve	(-) ve	NORMAL	-
104	Rani	61452	44	4	12	20	1	(-) ve	(-) ve	NORMAL	-
105	Kokila	61463	28	2	14	18	3	(-) ve	(-) ve	NORMAL	-
106	Ananthi	60703	29	5	14	20	1	(+) ve	(+) ve	INFLAM	INFLAM
107	Pasimalar	61457	43	4	15	20	2	(-) ve	(-) ve	NORMAL	NORMAL
108	Prasanna	61466	28	2	12	21	3	(-) ve	(-) ve	NORMAL	-
109	Lalitha	61430	20	3	13	18	4	(-) ve	(-) ve	NORMAL	-
110	Pattammal	58219	55	4	16	19	5	(+) ve	(+) ve	INFLAM	INFLAM
111	Aysha	61485	55	5	16	22	2	(+) ve	(+) ve	INFLAM	INFLAM
112	Kindammal	60828	40	3	15	22	1	(-) ve	(-) ve	NORMAL	-
113	Selvi	51122	40	5	14	21	2	(-) ve	(-) ve	NORMAL	-

114	Rajee	60065	35	5	12	20	3	(-) ve	(-) ve	NORMAL	NORMAL
115	Anopselvi	60023	42	5	14	18	1	(-) ve	(-) ve	NORMAL	-
116	Amsa	6134	51	4	12	20	2	(+) ve	(+) ve	NORMAL	NORMAL
117	Vasanthi	61376	55	3	14	18	1	(-) ve	(-) ve	NORMAL	-
118	Kuppammal	61340	56	4	14	20	2	(-) ve	(-) ve	NORMAL	-
119	Mehoob	61206	45	2	15	20	1	(-) ve	(-) ve	NORMAL	-
120	Rani	60856	42	5	12	15	2	(+) ve	(+) ve	NORMAL	NORMAL
121	Amudha	61329	40	4	13	26	4	(+) ve	(+) ve	INFLAM	INFLAM
122	Abi Bee	61325	37	3	16	25	3	(-) ve	(-) ve	NORMAL	-
123	Krishnammal	61324	41	4	16	16	2	(-) ve	(-) ve	NORMAL	-
124	Mala	61452	50	2	15	17	1	(-) ve	(-) ve	NORMAL	NORMAL
125	Usha	61384	53	5	14	18	2	(-) ve	(-) ve	NORMAL	-
126	Indhu	31452	58	4	12	21	1	(+) ve	(+) ve	NORMAL	NORMAL
127	Kondammal	3145	32	2	14	18	3	(-) ve	(-) ve	NORMAL	-
128	Shanthi	1254	39	3	16	22	1	(-) ve	(-) ve	NORMAL	-
129	Rameesa	13277	43	4	15	21	2	(-) ve	(-) ve	NORMAL	-
130	Shanthi	20862	35	5	14	20	3	(+) ve	(+) ve	NORMAL	NORMAL
131	Vedha valli	24606	38	3	12	18	2	(+) ve	(+) ve	NORMAL	NORMAL
132	Amsa	5152	44	5	13	20	5	(-) ve	(-) ve	NORMAL	-
133	Jamathi	5264	52	5	12	20	2	(-) ve	(-) ve	NORMAL	-
134	Padmavathi	6063	28	4	16	21	1	(-) ve	(-) ve	NORMAL	NORMAL
135	Neelammal	33261	54	3	15	18	2	(+) ve	(+) ve	NORMAL	INFLAM
136	Dhana Bakyam	7010	45	4	14	19	3	(+) ve	(+) ve	NORMAL	INFLAM
137	Pappa	36806	53	2	12	22	1	(+) ve	(+) ve	NORMAL	INFLAM
138	Jasby Raj	36807	58	5	16	22	2	(-) ve	(-) ve	NORMAL	-
139	Shanthi	7960	32	3	15	21	1	(-) ve	(-) ve	NORMAL	-
140	Gowri	21651	39	3	14	20	2	(+) ve	(+) ve	NORMAL	NORMAL
141	Ammeena	21654	41	4	12	18	1	(+) ve	(+) ve	NORMAL	INFLAM
142	Saraswathi	46222	36	2	14	20	3	(-) ve	(-) ve	NORMAL	-
143	Nirmala	21672	30	5	12	18	5	(+) ve	(+) ve	NORMAL	NORMAL
144	Rukmani	43113	47	4	16	21	2	(-) ve	(-) ve	NORMAL	-
145	Faisy	41514	47	3	15	18	3	(-) ve	(-) ve	NORMAL	NORMAL
146	Lakshmi	45456	48	4	14	22	4	(+) ve	(+) ve	NORMAL	INFLAM
147	Chitra Devi	45406	35	2	12	21	3	(-) ve	(-) ve	NORMAL	-
148	Jaya lakshmi	49377	34	5	14	20	2	(+) ve	(+) ve	NORMAL	INFLAM
149	Valliammal	4912	38	4	14	18	1	(-) ve	(-) ve	NORMAL	-
150	Rani	50560	39	3	15	20	2	(+) ve	(+) ve	NORMAL	INFLAM
151	Bakya Jyothi	11155	42	5	12	20	3	(+) ve	(+) ve	NORMAL	NORMAL
152	Kamakshi	10471	32	4	16	21	1	(-) ve	(-) ve	NORMAL	-

153	Chitra	49700	50	5	15	18	4	(-) ve	(-) ve	NORMAL	-
154	Malliga	57575	44	3	14	19	5	(+) ve	(+) ve	NORMAL	INFLAM
155	Asha	11722	48	5	12	22	1	(+) ve	(+) ve	NORMAL	NORMAL
156	Shamin	53204	41	5	14	22	2	(+) ve	(+) ve	INFLAM	INFLAM
157	Vijaya	48674	52	4	14	21	1	(-) ve	(-) ve	INFLAM	-
158	Kasthuri	46937	44	3	15	20	1	(+) ve	(+) ve	NORMAL	NORMAL
159	Gowriammal	46547	28	4	12	18	2	(-) ve	(-) ve	NORMAL	NORMAL
160	Janaki	55952	29	4	13	20	3	(-) ve	(-) ve	NORMAL	-
161	Devika	52611	43	3	16	20	4	(+) ve	(+) ve	INFLAM	INFLAM
162	Kannammal	54361	28	5	16	21	3	(-) ve	(-) ve	NORMAL	-
163	Mala	53214	20	5	15	18	2	(-) ve	(-) ve	NORMAL	-
164	Chandrakala	53241	22	4	14	19	1	(-) ve	(-) ve	NORMAL	-
165	Ananthi	54213	33	4	12	22	5	(+) ve	(+) ve	NORMAL	INFLAM
166	Kasthuri	4511	40	3	14	22	3	(+) ve	(+) ve	INFLAM	INFLAM
167	Anjali	45715	40	5	12	21	1	(+) ve	(+) ve	NORMAL	INFLAM
168	Rani	13552	35	4	16	20	4	(-) ve	(-) ve	NORMAL	-
169	Girija	23145	42	5	15	18	2	(-) ve	(-) ve	NORMAL	-
170	Rathu	61694	51	3	14	20	1	(-) ve	(-) ve	NORMAL	NORMAL
171	Jayalakshmi	63678	55	4	12	21	2	(-) ve	(-) ve	NORMAL	-
172	Dhanyu	63678	56	5	14	20	1	(+) ve	(+) ve	NORMAL	NORMAL
173	Kalaivani	63415	43	5	14	18	3	(+) ve	(+) ve	INFLAM	INFLAM
174	Yamuna	54091	20	4	15	20	1	(+) ve	(+) ve	INFLAM	INFLAM
175	Bhavani	53716	27	4	12	20	2	(-) ve	(-) ve	NORMAL	-
176	Kondammal	65412	48	4	16	21	4	(+) ve	(+) ve	NORMAL	NORMAL
177	Renuka	37908	28	3	15	18	3	(-) ve	(-) ve	NORMAL	-
178	Nirmala	43026	30	4	14	19	4	(+) ve	(+) ve	INFLAM	INFLAM
179	Siluvai Mary	76447	35	2	12	22	1	(-) ve	(-) ve	NORMAL	-
180	Anna poorni	62028	33	5	14	22	3	(-) ve	(-) ve	NORMAL	-
181	Manjula	64025	23	4	14	21	2	(-) ve	(-) ve	NORMAL	NORMAL
182	Thavamani	63256	37	2	15	20	1	(-) ve	(-) ve	NORMAL	-
183	Sathya	64416	38	3	12	18	2	(-) ve	(-) ve	NORMAL	-
184	Vasanthi	64445	37	4	13	20	1	(-) ve	(-) ve	INFLAM	-
185	Madhavi	60870	25	5	16	18	1	(-) ve	(-) ve	NORMAL	-
186	Kala	64528	25	3	16	20	3	(+) ve	(+) ve	INFLAM	INFLAM
187	Dhanu	64532	40	5	15	20	5	(+) ve	(+) ve	NORMAL	NORMAL
188	Chandra	28871	23	5	14	15	1	(-) ve	(-) ve	NORMAL	-
189	Elammal	65421	60	4	12	26	2	(-) ve	(-) ve	NORMAL	-
190	Maniammal	63761	44	3	14	25	1	(+) ve	(+) ve	NORMAL	NORMAL
191	Vijaya	69812	40	4	12	16	3	(-) ve	(-) ve	NORMAL	-

192	Rani	59524	45	2	14	17	1	(-) ve	(-) ve	INFLAM	-
193	Kanchana	58610	28	5	14	18	2	(-) ve	(-) ve	NORMAL	-
194	Nava Neetham	64766	56	3	15	21	3	(-) ve	(-) ve	NORMAL	NORMAL
195	Renuka	63769	40	3	12	18	4	(+) ve	(+) ve	NORMAL	INFLAM
196	Sasi kala	62479	45	4	13	22	3	(+) ve	(+) ve	NORMAL	INFLAM
197	Brindha	57701	35	2	16	21	2	(-) ve	(-) ve	NORMAL	-
198	Nirmala	43026	30	5	16	20	5	(+) ve	(+) ve	NORMAL	INFLAM
199	Pachaimmal	43251	42	4	15	18	2	(-) ve	(-) ve	ATYPICAL	INFLAM
200	Jaya Mary	65215	35	3	14	20	3	(-) ve	(-) ve	NORMAL	-
201	Nirmala	6440	35	4	12	20	1	(-) ve	(-) ve	NORMAL	-
202	Vanitha	65217	51	2	14	21	1	(-) ve	(-) ve	INFLAM	-
203	Poornima	65392	39	5	16	18	3	(-) ve	(-) ve	NORMAL	NORMAL
204	Selvi	64113	37	4	15	19	2	(-) ve	(-) ve	NORMAL	-
205	Kalyani	65618	40	3	14	22	1	(-) ve	(-) ve	NORMAL	-
206	Renuka	65681	22	5	12	22	2	(-) ve	(-) ve	NORMAL	-
207	Kani Mozhi	60230	18	4	13	21	1	(-) ve	(-) ve	NORMAL	-
208	Lakshmi	15291	27	5	12	20	3	(-) ve	(-) ve	NORMAL	-
209	Kanniammal	55462	55	3	16	18	5	(+) ve	(+) ve	NORMAL	INFLAM
210	Anjali	52664	29	5	15	20	2	(+) ve	(+) ve	NORMAL	NORMAL
211	Kannammal	65421	35	5	14	20	3	(+) ve	(+) ve	NORMAL	NORMAL
212	Devaki	65915	38	4	12	21	4	(-) ve	(-) ve	NORMAL	-
213	Kani Mozhi	60230	35	4	14	18	3	(-) ve	(-) ve	NORMAL	NORMAL
214	Vasantha	65576	55	5	14	19	2	(-) ve	(-) ve	NORMAL	-
215	Selvi	63348	37	3	15	22	1	(-) ve	(-) ve	NORMAL	-
216	Mary	51965	35	4	12	22	2	(+) ve	(+) ve	INFLAM	INFLAM
217	Anna poorni	62028	29	5	16	21	3	(-) ve	(-) ve	INFLAM	-
218	Shanthi	66154	42	5	15	20	1	(-) ve	(-) ve	NORMAL	-
219	Shanthini	66153	32	4	14	18	2	(-) ve	(-) ve	NORMAL	-
220	Premavathy	63870	50	4	12	20	5	(+) ve	(+) ve	NORMAL	INFLAM
221	Revathi	61102	25	4	14	21	2	(+) ve	(+) ve	INFLAM	INFLAM
222	Parveen Banu	66171	25	3	14	20	1	(-) ve	(-) ve	NORMAL	-
223	Kathun Begam	64751	28	4	15	18	3	(-) ve	(-) ve	NORMAL	NORMAL
224	Bhavani	53716	27	2	12	20	1	(+) ve	(+) ve	INFLAM	INFLAM
225	Alamelu	7275	30	5	13	20	2	(+) ve	(+) ve	NORMAL	INFLAM
226	Munniammal	59939	30	4	16	21	3	(+) ve	(+) ve	INFLAM	INFLAM
227	Nava Neetham	66172	21	2	16	18	4	(-) ve	(-) ve	INFLAM	-
228	Kannammal	5546	55	3	15	19	3	(-) ve	(-) ve	INFLAM	-
229	kalaivani	65386	25	4	14	22	2	(-) ve	(-) ve	NORMAL	-
230	Narmadha	75718	21	5	12	22	1	(+) ve	(+) ve	NORMAL	INFLAM

231	Meena	68451	50	3	14	21	5	(+) ve	(+) ve	INFLAM	INFLAM
232	Yasodha	65619	38	5	12	20	3	(-) ve	(-) ve	NORMAL	-
233	Premavathy	63872	56	5	16	18	1	(+) ve	(+) ve	INFLAM	INFLAM
234	Sundari	28876	37	4	15	20	4	(-) ve	(-) ve	NORMAL	-
235	Subbu lakshmi	65727	33	3	14	18	2	(-) ve	(-) ve	NORMAL	NORMAL
236	Amala	65821	35	4	12	20	1	(+) ve	(+) ve	INFLAM	INFLAM
237	Dhanushkodi	67048	33	2	14	20	2	(-) ve	(-) ve	NORMAL	-
238	Selvi	67010	25	5	14	15	1	(-) ve	(-) ve	NORMAL	-
239	Siva Janaki	66868	35	3	15	26	1	(-) ve	(-) ve	NORMAL	-
240	Rosi	63282	35	3	12	25	2	(-) ve	(-) ve	NORMAL	-
241	Prema	66491	42	4	16	16	3	(+) ve	(+) ve	NORMAL	INFLAM
242	Mary	63049	42	2	15	17	4	(+) ve	(+) ve	NORMAL	INFLAM
243	Selvi	64759	38	5	14	18	3	(-) ve	(-) ve	NORMAL	-
244	Ponkodi	66435	45	4	12	21	2	(-) ve	(-) ve	NORMAL	-
245	Jamuna	67223	41	3	14	18	1	(-) ve	(-) ve	NORMAL	-
246	Saraswathi	66997	42	4	14	22	2	(-) ve	(-) ve	NORMAL	-
247	Selvi	9872	24	2	15	21	3	(-) ve	(-) ve	NORMAL	-
248	Rageem	6738	28	5	12	20	1	(-) ve	(-) ve	NORMAL	-
249	Jamuna	65016	30	4	13	18	4	(-) ve	(-) ve	NORMAL	NORMAL
250	Mohana	65615	21	4	16	20	2	(+) ve	(+) ve	INFLAM	INFLAM
251	Amul	67173	47	2	16	20	1	(+) ve	(+) ve	INFLAM	INFLAM
252	Vijaya	4449	30	3	15	21	2	(-) ve	(-) ve	NORMAL	-
253	Kasthuri	10268	38	4	14	18	5	(+) ve	(+) ve	NORMAL	INFLAM
254	Devika	67829	31	5	12	19	3	(-) ve	(-) ve	NORMAL	-
255	Ganga	67800	39	3	14	22	1	(-) ve	(-) ve	NORMAL	-
256	Punita	46999	28	5	12	22	2	(+) ve	(+) ve	INFLAM	INFLAM
257	Ammu	67903	37	5	14	21		(-) ve	(-) ve	NORMAL	-
258	Samiya bulla	47947	32	4	14	20		(-) ve	(-) ve	NORMAL	-
259	Vimala	65424	29	3	15	18		(-) ve	(-) ve	NORMAL	-
260	Selvi	65070	29	4	12	20	1	(+) ve	(+) ve	NORMAL	NORMAL
261	Kalayarasi	62912	46	2	13	18	3	(+) ve	(+) ve	NORMAL	INFLAM
262	Gowri	68112	25	5	16	20	2	(-) ve	(-) ve	NORMAL	NORMAL
263	Vijayalakshmi	68211	40	3	16	20	1	(-) ve	(-) ve	NORMAL	-
264	Nirmala	13030	30	3	15	21	4	(-) ve	(-) ve	NORMAL	-
265	Vijayalakshmi	8308	70	4	14	18	1	(-) ve	(-) ve	NORMAL	-
266	Selvi	68210	30	5	12	19	1	(-) ve	(-) ve	NORMAL	-
267	Govindammal	13802	33	3	14	22	3	(-) ve	(-) ve	NORMAL	-
268	Aishu	68219	38	5	16	22	2	(-) ve	(-) ve	NORMAL	-
269	Yuvarani	68273	20	5	14	21	1	(+) ve	(+) ve	NORMAL	NORMAL

270	Deepa	68302	25	4	15	20	2	(-) ve	(-) ve	NORMAL	-
271	Velamuthu	67224	23	3	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
272	Meena	68453	50	4	12	20	3	(-) ve	(-) ve	NORMAL	-
273	Paapathi	39071	65	2	14	21	1	(-) ve	(-) ve	NORMAL	NORMAL
274	Gersi	67310	36	5	14	20	2	(-) ve	(-) ve	NORMAL	-
275	Abitha Begam	15464	47	3	12	18	5	(+) ve	(+) ve		INFLAM
276	Kalaiselvi	69767	28	3	15	20	4	(+) ve	(+) ve		INFLAM
277	Vijaya	6838	62	4	14	20	3	(-) ve	(-) ve	NORMAL	-
278	Krishnaveni	68378	24	2	12	21	2	(-) ve	(-) ve	NORMAL	-
279	Selvi	65471	29	5	14	18	1	(+) ve	(+) ve		INFLAM
280	Ramani	68423	35	4	16	19	2	(-) ve	(-) ve	NORMAL	-
281	Vijaya	68352	32	3	15	22	3	(+) ve	(+) ve		INFLAM
282	Santhi	68607	32	4	14	22	1	(-) ve	(-) ve	NORMAL	-
283	Dhanayanthree	68621	37	2	12	21	3	(-) ve	(-) ve	NORMAL	-
284	Mary	63041	36	4	14	20	2	(-) ve	(-) ve	NORMAL	INFLAM
285	Shanthi	68263	42	5	16	18	1	(-) ve	(-) ve	NORMAL	-
286	Saraswathi	48528	55	4	15	20	5	(+) ve	(+) ve	INFLAM	INFLAM
287	Nagarjuna	68719	30	5	14	18	1	(-) ve	(-) ve	NORMAL	-
288	Sathyanthi	68716	45	4	12	20	3	(-) ve	(-) ve	NORMAL	-
289	Vadravathi	68910	42	3	13	20	1	(-) ve	(-) ve	NORMAL	NORMAL
290	Femina	65741	45	4	12	15	2	(-) ve	(-) ve	NORMAL	-
291	Lidia	68225	45	4	16	26	3	(+) ve	(+) ve	INFLAM	INFLAM
292	Mariyammal	69007	30	3	15	25	4	(-) ve	(-) ve	NORMAL	-
293	Viji	68996	28	5	14	16	3	(-) ve	(-) ve	NORMAL	-
294	Malathi	68995	45	5	12	17	2	(-) ve	(-) ve	NORMAL	-
295	Johathi	67471	39	4	16	18	1	(-) ve	(-) ve	NORMAL	-
296	Abilakshmi	68284	35	4	15	21	2	(+) ve	(+) ve	NORMAL	NORMAL
297	Jothi	12721	35	3	14	18	4	(+) ve	(+) ve	NORMAL	INFLAM
298	Rasol Bee	68427	41	5	12	22	1	(-) ve	(-) ve	NORMAL	-
299	Jayakool	16511	35	4	14	21	2	(-) ve	(-) ve	ATYPICAL	INFLAM
300	Mahtoob	68942	30	5	12	20	1	(-) ve	(-) ve	NORMAL	-
301	Mohana	65061	25	3	16	18	2	(-) ve	(-) ve	NORMAL	-
302	Naramma	69200	60	4	15	20	1	(-) ve	(-) ve	NORMAL	-
303	Janaki	68432	28	5	14	20	3	(-) ve	(-) ve	NORMAL	-
304	Lakshmi	69288	20	5	12	21	1	(-) ve	(-) ve	NORMAL	-
305	Vasuki	68958	35	4	14	18	2	(-) ve	(-) ve	NORMAL	NORMAL
306	Selvi	26319	32	4	14	19	3	(-) ve	(-) ve	NORMAL	-
307	Indhu kumari	68394	56	4	15	22	4	(-) ve	(-) ve	NORMAL	-
308	Sivakami	16834	31	5	12	22	5	(-) ve	(-) ve	NORMAL	-

309	Anjali	16446	25	4	16	21	2	(+) ve	(+) ve	NORMAL	NORMAL
310	Manjula	68427	28	5	15	20	1	(+) ve	(+) ve	NORMAL	NORMAL
311	Dhanalakshmi	65125	29	3	14	26	2	(+) ve	(+) ve	NORMAL	NORMAL
312	Kantha	69751	40	4	12	24	3	(-) ve	(-) ve	NORMAL	-
313	Krishnaveni	6985	37	5	14	26	1	(-) ve	(-) ve	NORMAL	-
314	kanchana	69951	28	5	14	26	4	(-) ve	(-) ve	NORMAL	-
315	Shanthi	69946	30	3	15	27	2	(-) ve	(-) ve	NORMAL	-
316	Rajeswari	69961	45	2	12	24	1	(+) ve	(+) ve	NORMAL	NORMAL
317	Sumathi	70081	34	4	13	25	2	(-) ve	(-) ve	NORMAL	-
318	Gangamma	45543	31	4	16	28	1	(-) ve	(-) ve	NORMAL	NORMAL
319	Kalyani	16224	40	5	16	28	5	(+) ve	(+) ve	INFLAM	INFLAM
320	Jenifer	71134	26	4	15	27	2	(+) ve	(+) ve	NORMAL	NORMAL
321	Badhulla	70135	20	2	14	26	3	(+) ve	(+) ve	NORMAL	INLFLAM
322	Saraswathi	70150	33	5	12	24	4	(-) ve	(-) ve	NORMAL	-
323	Amala	263168	22	4	14	26	3	(-) ve	(-) ve	NORMAL	-
324	Shymala	70140	30	2	12	24	2	(-) ve	(-) ve	NORMAL	NORMAL
325	Indrani	70237	34	3	16	28	1	(-) ve	(-) ve	NORMAL	-
326	Nilla	70411	40	4	15	27	2	(+) ve	(+) ve	NORMAL	NORMAL
327	Samitha	70393	27	5	14	26	3	(-) ve	(-) ve	NORMAL	-
328	Aruna	70900	39	3	12	24	1	(-) ve	(-) ve	NORMAL	-
329	Jameela	70410	18	5	14	26	4	(-) ve	(-) ve	NORMAL	-
330	Lakshmi	70414	34	5	14	26	4	(+) ve	(+) ve	HSIL	MOD.DYSPLASIA
331	Kamala	69027	42	4	15	27	1	(+) ve	(+) ve	INFLAM	INFLAM
332	Saraswathi	70195	30	3	12	24	2	(-) ve	(-) ve	NORMAL	-
333	Pushpa	69197	31	4	16	28	1	(-) ve	(-) ve	NORMAL	-
334	Neelammal	65498	50	2	15	27	3	(-) ve	(-) ve	NORMAL	NORMAL
335	Gani	64318	23	5	14	26	1	(-) ve	(-) ve	NORMAL	-
336	Rajeswari	5117	21	3	12	24	2	(+) ve	(+) ve	NORMAL	INFLAM
337	Pushpavalli	1071	36	3	14	26	2	(-) ve	(-) ve	NORMAL	-
338	Sumathi	51423	33	4	14	26	1	(-) ve	(-) ve	NORMAL	-
339	Ponniammal	68514	28	2	15	27	3	(-) ve	(-) ve	NORMAL	-
340	Mahalakshmi	1639	27	5	12	24	1	(+) ve	(+) ve	NORMAL	NORMAL
341	Jamuna	69340	30	4	13	25	5	(+) ve	(+) ve	NORMAL	INFLAM
342	Alamelu	1249	60	3	16	28	2	(-) ve	(-) ve	NORMAL	-
343	Shantha	69441	32	4	16	28	1	(-) ve	(-) ve	NORMAL	-
344	Gowri	1040	34	2	15	27	2	(-) ve	(-) ve	NORMAL	NORMAL
345	Suseela	976	30	5	14	26	1	(-) ve	(-) ve	NORMAL	-
346	Devi	284	26	4	12	24	1	(+) ve	(+) ve	NORMAL	INFLAM
347	Shanthi	1477	37	4	14	26	3	(-) ve	(-) ve	NORMAL	-

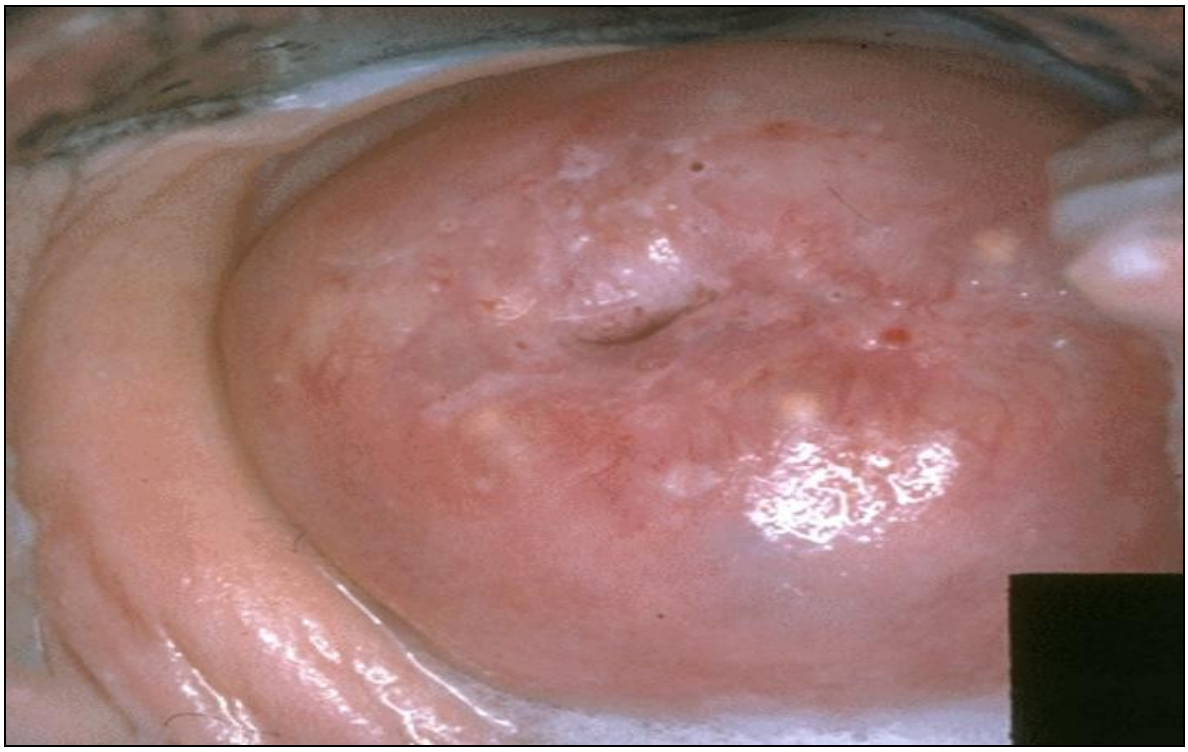
348	Renuka	63769	40	2	12	24	2	(-) ve	(-) ve	NORMAL	-
349	Therasa	1609	35	3	14	26	1	(-) ve	(-) ve	NORMAL	-
350	Ramani	68423	38	4	14	26	2	(+) ve	(+) ve	NORMAL	NORMAL
351	Tharaselvi	2553	24	5	15	27	1	(-) ve	(-) ve	NORMAL	-
352	Yamini	2526	31	3	12	24	5	(-) ve	(-) ve	NORMAL	-
353	Vimala	253	32	5	13	25	1	(-) ve	(-) ve	NORMAL	-
354	Malika	1175	29	5	16	28	2	(-) ve	(-) ve	NORMAL	-
355	Geetha	3473	30	4	16	28	3	(-) ve	(-) ve	NORMAL	-
356	Kalaiselvi	2548	43	3	15	26	4	(+) ve	(+) ve	NORMAL	INFLAM
357	Anjali	1014	32	4	14	25	3	(-) ve	(-) ve	NORMAL	NORMAL
358	Mary Joseph	3016	41	2	12	16	2	(-) ve	(-) ve	NORMAL	-
359	Chitra	7010	54	5	14	17	1	(-) ve	(-) ve	NORMAL	-
360	ramani	1082	35	3	16	18	2	(+) ve	(+) ve	NORMAL	NORMAL
361	Malika	3019	37	3	15	21	3	(+) ve	(+) ve	INFLAM	INFLAM
362	Bhuvaneswari	313	25	4	14	18	1	(-) ve	(-) ve	NORMAL	-
363	Shanthi	3141	50	5	12	22	4	(+) ve	(+) ve	HSIL	MOD.DYSPLASIA
364	Asha	3470	21	3	13	21	3	(-) ve	(-) ve	NORMAL	-
365	Mariamma	3520	36	5	12	20	2	(-) ve	(-) ve	NORMAL	-
366	Selvi	3527	30	5	16	18	1	(+) ve	(+) ve	INFLAM	INFLAM
367	Yamuna	2117	23	4	15	20	2	(-) ve	(-) ve	NORMAL	-
368	Lakshmi	6547	33	3	14	20	1	(-) ve	(-) ve	NORMAL	NORMAL
369	Deepa	290	25	4	12	21	3	(-) ve	(-) ve	NORMAL	-
370	Kavitha	12859	30	2	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
371	Revathi	5837	41	5	14	19	2	(+) ve	(+) ve	NORMAL	INFLAM
372	Divya	6567	29	3	15	22	3	(-) ve	(-) ve	NORMAL	-
373	Lakshmi	435	43	3	12	22	4	(-) ve	(-) ve	NORMAL	-
374	Selvi	5900	39	4	16	21	5	(+) ve	(+) ve	NORMAL	INFLAM
375	Bharathi	5913	35	5	15	20	2	(-) ve	(-) ve	NORMAL	-
376	Vijaya	5949	38	4	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
377	Anjali	52566	37	5	12	20	2	(-) ve	(-) ve	NORMAL	-
378	Usharani	2120	29	3	14	18	3	(-) ve	(-) ve	NORMAL	-
379	Vasanthi	706	35	4	14	20	1	(-) ve	(-) ve	NORMAL	-
380	Chitra	6130	38	5	15	20	2	(+) ve	(+) ve	NORMAL	NORMAL
381	Alamelu	6542	35	5	12	21	1	(+) ve	(+) ve	NORMAL	NORMAL
382	Jeeva	6336	26	4	13	18	2	(-) ve	(-) ve	NORMAL	-
383	Mangamma	6431	22	4	16	19	1	(-) ve	(-) ve	NORMAL	-
384	Rani	6428	26	5	16	22	3	(-) ve	(-) ve	NORMAL	NORMAL
385	Kalavathy	6673	37	3	15	22	5	(+) ve	(+) ve	NORMAL	INFLAM
386	Amudha	6490	38	4	14	21	2	(+) ve	(+) ve	NORMAL	NORMAL

387	kala	6587	46	5	12	20	3	(-) ve	(-) ve	NORMAL	-
388	Susila	6521	50	3	14	18	4	(-) ve	(-) ve	NORMAL	-
389	Jaya	6534	38	5	12	20	3	(-) ve	(-) ve	NORMAL	-
390	Kaniga	6493	40	5	16	21	2	(+) ve	(+) ve	NORMAL	NORMAL
391	Tamil selvi	338	30	4	15	20	1	(+) ve	(+) ve	NORMAL	NORMAL
392	Pappu	6990	35	3	14	18	2	(-) ve	(-) ve	NORMAL	-
393	Saraswathi	3214	42	4	12	20	3	(-) ve	(-) ve	NORMAL	-
394	Kuppu	5412	30	2	14	20	1	(-) ve	(-) ve	NORMAL	-
395	Pushpa	6742	54	5	14	21	4	(-) ve	(-) ve	NORMAL	-
396	Nameela	7020	29	4	15	18	5	(+) ve	(+) ve	HSIL	MILDDYSPLASIA
397	Devi shree	3625	40	3	12	19	1	(-) ve	(-) ve	NORMAL	-
398	Shanthi	7175	34	4	16	22	2	(-) ve	(-) ve	NORMAL	NORMAL
399	Santha	65181	38	2	15	22	1	(-) ve	(-) ve	NORMAL	INFLAM
400	kalaivani	77	50	5	14	21	1	(+) ve	(+) ve	NORMAL	NORMAL
401	Devi	7450	29	4	12	20	2	(+) ve	(+) ve	NORMAL	NORMAL
402	Anjali	6749	46	2	14	18	3	(-) ve	(-) ve	NORMAL	-
403	Gayathri	6808	31	3	14	20	4	(-) ve	(-) ve	NORMAL	-
404	Shyamala	7634	36	4	15	18	3	(-) ve	(-) ve	NORMAL	-
405	Kuppammal	6731	55	5	12	20	2	(+) ve	(+) ve	NORMAL	NORMAL
406	Mariammal	7712	30	3	13	20	1	(-) ve	(-) ve	NORMAL	NORMAL
407	Karuna	4802	31	5	16	15	5	(+) ve	(+) ve	LSIL	INFLAM
408	Kalaiammal	8113	62	5	16	26	3	(-) ve	(-) ve	NORMAL	-
409	Chinnaponnu	8613	38	4	15	25	1	(-) ve	(-) ve	NORMAL	-
410	Saraswathi	8730	25	3	14	16	4	(+) ve	(+) ve	NORMAL	NORMAL
411	Revathi	6891	55	4	12	19	2	(+) ve	(+) ve	NORMAL	NORMAL
412	Ambika	2251	24	2	14	22	2	(-) ve	(-) ve	NORMAL	-
413	Ammu	3652	46	5	16	22	1	(-) ve	(-) ve	NORMAL	-
414	Chitra	4125	32	4	14	21	2	(-) ve	(-) ve	NORMAL	-
415	Shanthi	7615	30	3	15	20	1	(-) ve	(-) ve	NORMAL	NORMAL
416	Kumari	9208	32	2	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
417	Kalaiyarasi	7388	31	4	12	20	2	(-) ve	(-) ve	NORMAL	-
418	Selvi	1061	40	5	14	21	5	(+) ve	(+) ve	LSIL	INFLAM
419	Alsana	6162	35	3	14	20	4	(-) ve	(-) ve	NORMAL	-
420	Magopal	9106	40	4	12	18	3	(+) ve	(+) ve	NORMAL	NORMAL
421	Sargunamathy	9509	22	5	15	20	2	(+) ve	(+) ve	NORMAL	NORMAL
422	Mangai	1610	43	3	14	20	1	(-) ve	(-) ve	NORMAL	-
423	Mullai Kodi	9492	46	5	12	21	2	(-) ve	(-) ve	NORMAL	-
424	Kaja lakshmi	9488	39	5	14	18	3	(-) ve	(-) ve	NORMAL	-
425	Meha Boobi	9562	32	4	16	19	1	(-) ve	(-) ve	NORMAL	NORMAL

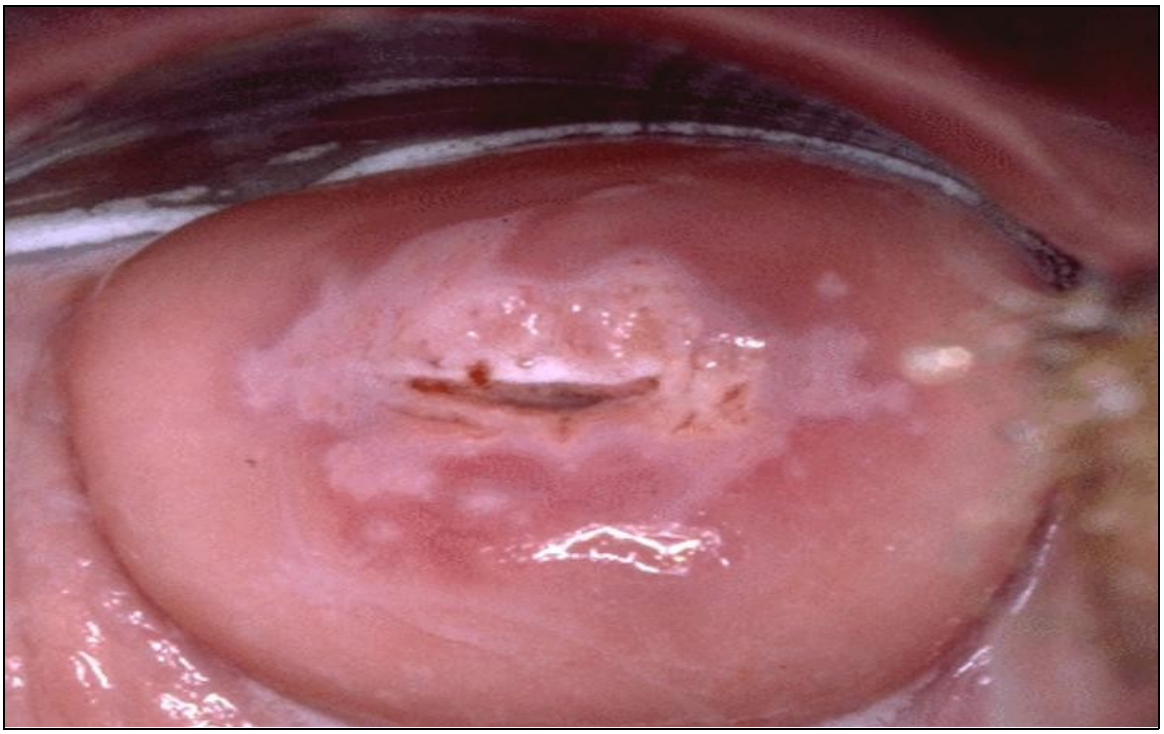
426	Lakshmi	6541	43	3	15	22	4	(+) ve	(+) ve	NORMAL	NORMAL
427	Sherif Abee	9709	55	3	14	22	2	(-) ve	(-) ve	NORMAL	-
428	Jamuna	9715	36	4	12	21	1	(-) ve	(-) ve	NORMAL	-
429	Chandra	9521	32	2	14	20	5	(+) ve	(+) ve	NORMAL	INFLAM
430	Varalakshmi	8837	35	5	16	18	1	(+) ve	(+) ve	NORMAL	NORMAL
431	Mohana	9072	42	4	15	20	3	(+) ve	(+) ve	NORMAL	NORMAL
432	Jayalakshmi	8308	53	3	14	18	1	(-) ve	(-) ve	NORMAL	-
433	Grazy	8940	32	4	12	20	2	(-) ve	(-) ve	NORMAL	-
434	Varalakshmi	10214	30	2	13	20		(-) ve	(-) ve	NORMAL	-
435	Mahalakshmi	10229	31	5	12	15		(-) ve	(-) ve	NORMAL	NORMAL
436	Nagavalli	10220	32	4	16	26		(+) ve	(+) ve	INFLAM	INFLAM
437	Anantha	9058	31	3	15	25	1	(-) ve	(-) ve	NORMAL	-
438	Kushboo	8737	40	5	14	16	3	(-) ve	(-) ve	NORMAL	-
439	Poongodi	7193	28	4	12	17	2	(-) ve	(-) ve	NORMAL	-
440	Renuka	4628	28	5	16	18	5	(+) ve	(+) ve	NORMAL	NORMAL
441	Nagammal	8735	43	3	15	21	2	(+) ve	(+) ve	INFLAM	INFLAM
442	Padmavathi	8997	38	5	14	18	1	(-) ve	(-) ve	NORMAL	-
443	Premaa	10721	31	5	12	22	1	(-) ve	(-) ve	NORMAL	-
444	Baby	10766	40	4	14	21	3	(-) ve	(-) ve	NORMAL	-
445	Neelavathi	10268	35	3	12	20	2	(-) ve	(-) ve	NORMAL	NORMAL
446	Yashoda	9302	38	4	16	18	1	(+) ve	(+) ve	INFLAM	INFLAM
447	Suganyaa	60782	32	4	15	20	2	(-) ve	(-) ve	NORMAL	-
448	Pichayammal	2795	55	3	14	20	1	(-) ve	(-) ve	NORMAL	-
449	Venkatalakshmee	9383	47	5	12	21	3	(-) ve	(-) ve	NORMAL	-
450	Selvi	7817	25	5	14	18	1	(+) ve	(+) ve	NORMAL	NORMAL
451	Velamuthu	8607	33	4	14	19	5	(+) ve	(+) ve	LSIL	INFLAM
452	Chinna Mary	9540	26	4	15	22	3	(-) ve	(-) ve	NORMAL	-
453	Musthaary	9854	40	3	12	22	4	(-) ve	(-) ve	NORMAL	-
454	Lakshmi	10835	45	5	16	21	3	(-) ve	(-) ve	NORMAL	-
455	Fathimaa	10254	30	4	15	20	2	(-) ve	(-) ve	NORMAL	-
456	Umaa	6600	28	5	14	26	1	(+) ve	(+) ve	LSIL	INFLAM
457	Kuppu	11242	35	3	12	24	2	(-) ve	(-) ve	NORMAL	NORMAL
458	Devi	11373	28	4	14	26	3	(-) ve	(-) ve	NORMAL	-
459	Govindammal	11255	26	5	14	26	1	(-) ve	(-) ve	NORMAL	-
460	Umaa	11340	30	5	15	27	1	(+) ve	(+) ve	NORMAL	NORMAL
461	Lakshmi	11099	40	4	12	24	3	(+) ve	(+) ve	INFLAM	INFLAM
462	Nagammal	11253	28	4	13	25	5	(+) ve	(+) ve	NORMAL	NORMAL
463	Selvi	11435	37	4	16	28	1	(-) ve	(-) ve	NORMAL	-
464	Ama	6402	36	2	16	28	2	(-) ve	(-) ve	NORMAL	-

465	Ariyaalu devi	9004	32	5	15	27	1	(-) ve	(-) ve	NORMAL	-
466	SivaShaanti	3654	30	4	14	26	3	(+) ve	(+) ve	NORMAL	NORMAL
467	Sadaanu devi	6541	46	3	12	24	1	(-) ve	(-) ve	NORMAL	-
468	Saraswathy	8730	27	4	14	26	2	(-) ve	(-) ve	NORMAL	NORMAL
469	Devanai	10495	60	2	12	24	3	(-) ve	(-) ve	NORMAL	-
470	Sammpoorana	11426	21	5	16	28	4	(+) ve	(+) ve	NORMAL	NORMAL
471	Radha	10730	55	4	15	27	3	(+) ve	(+) ve	INFLAM	INFLAM
472	Chandra	5952	34	2	14	26	2	(-) ve	(-) ve	NORMAL	-
473	Shalini	122	32	3	12	24	5	(+) ve	(+) ve	HSIL	MILD DYSPLASIA+L 3
474	Porvaahi	67731	40	5	14	26	2	(-) ve	(-) ve	NORMAL	-
475	Vasanthy	11807	30	3	14	26	3	(-) ve	(-) ve	NORMAL	-
476	Malliga	9625	30	5	15	27	1	(+) ve	(+) ve	INFLAM	INFLAM
477	Sheela	6987	35	5	12	24	2	(-) ve	(-) ve	NORMAL	-
478	Amul	9378	25	4	16	28	1	(-) ve	(-) ve	NORMAL	-
479	Diga bai	12601	50	3	15	27	2	(-) ve	(-) ve	NORMAL	-
480	Chinna Mary	12001	40	3	15	26	1	(+) ve	(+) ve	NORMAL	NORMAL
481	Marriyaal	11088	31	4	14	24	3	(+) ve	(+) ve	NORMAL	INFLAM
482	Padmavathi	12722	39	2	12	26	1	(-) ve	(-) ve	NORMAL	NORMAL
483	Sakira bai	12085	25	5	14	26	2	(-) ve	(-) ve	NORMAL	-
484	Sarala	958	37	4	12	27	4	(+) ve	(+) ve	NORMAL	NORMAL
485	Arputham	1277	35	3	14	24	4	(-) ve	(-) ve	NORMAL	-
486	Santhi	1125	37	4	14	25	3	(+) ve	(+) ve	INFLAM	INFLAM
487	Gracy	11208	20	2	15	28	2	(-) ve	(-) ve	NORMAL	-
488	Kalayammal	12900	31	5	12	28	1	(-) ve	(-) ve	NORMAL	-
489	Muthulakshmi	11425	40	4	13	27	2	(-) ve	(-) ve	NORMAL	-
490	Madana	11426	40	3	16	26	3	(+) ve	(+) ve	NORMAL	NORMAL
491	Pathima	11605	27	5	16	24	1	(+) ve	(+) ve	INFLAM	INFLAM
492	Padmavathi	12517	32	4	15	26	4	(-) ve	(-) ve	NORMAL	-
493	Savithri	10426	30	5	14	24	3	(-) ve	(-) ve	NORMAL	NORMAL
494	Lakshmi	13043	32	3	12	26	2	(-) ve	(-) ve	NORMAL	-
495	Parimala	13053	35	5	14	26	5	(+) ve	(+) ve	NORMAL	NORMAL
496	Gayathri	11607	33	5	16	27	2	(+) ve	(+) ve	INFLAM	INFLAM
497	Shylaja	13278	70	4	15	24	1	(-) ve	(-) ve	NORMAL	-
498	Harithiammal	9015	30	3	14	25	3	(-) ve	(-) ve	NORMAL	-
499	Nagooramma	11821	25	4	12	28	1	(-) ve	(-) ve	NORMAL	INFLAM
500	Kamakshi	6469	30	4	13	28	2	(+) ve	(+) ve	NORMAL	NORMAL

VIA POSITIVE



NORMAL CERVIX WITH NABOTHANAIN CYSTS (small)



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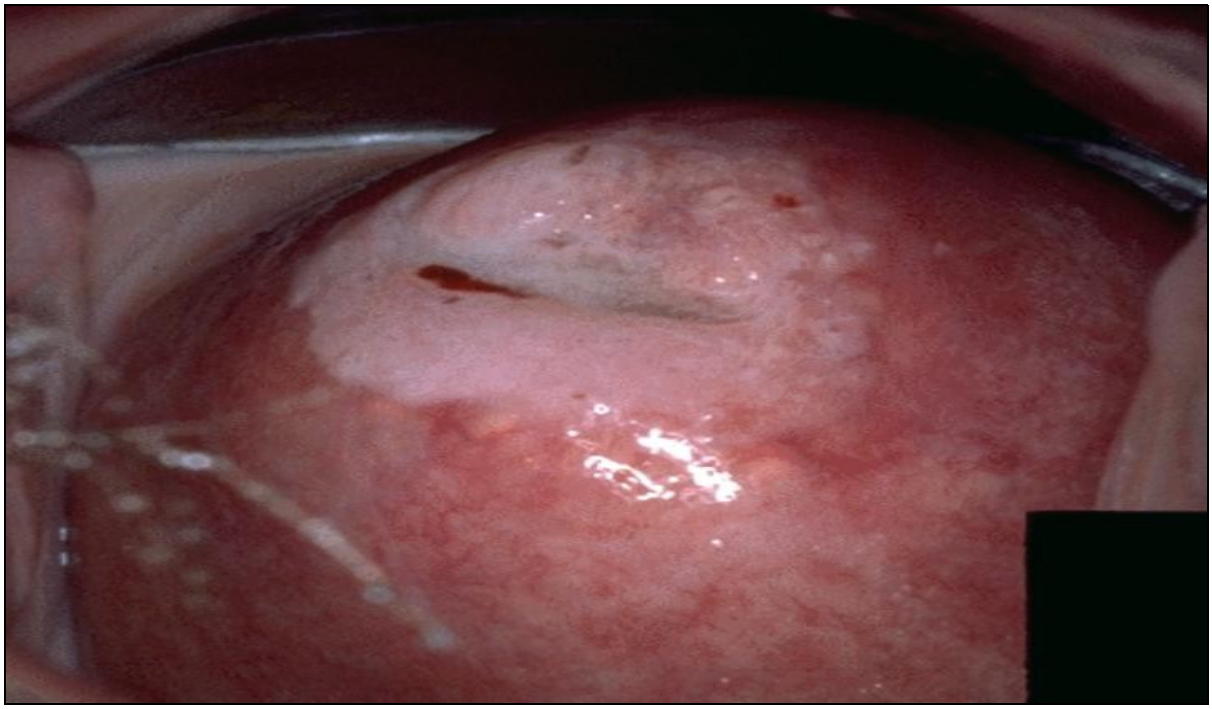

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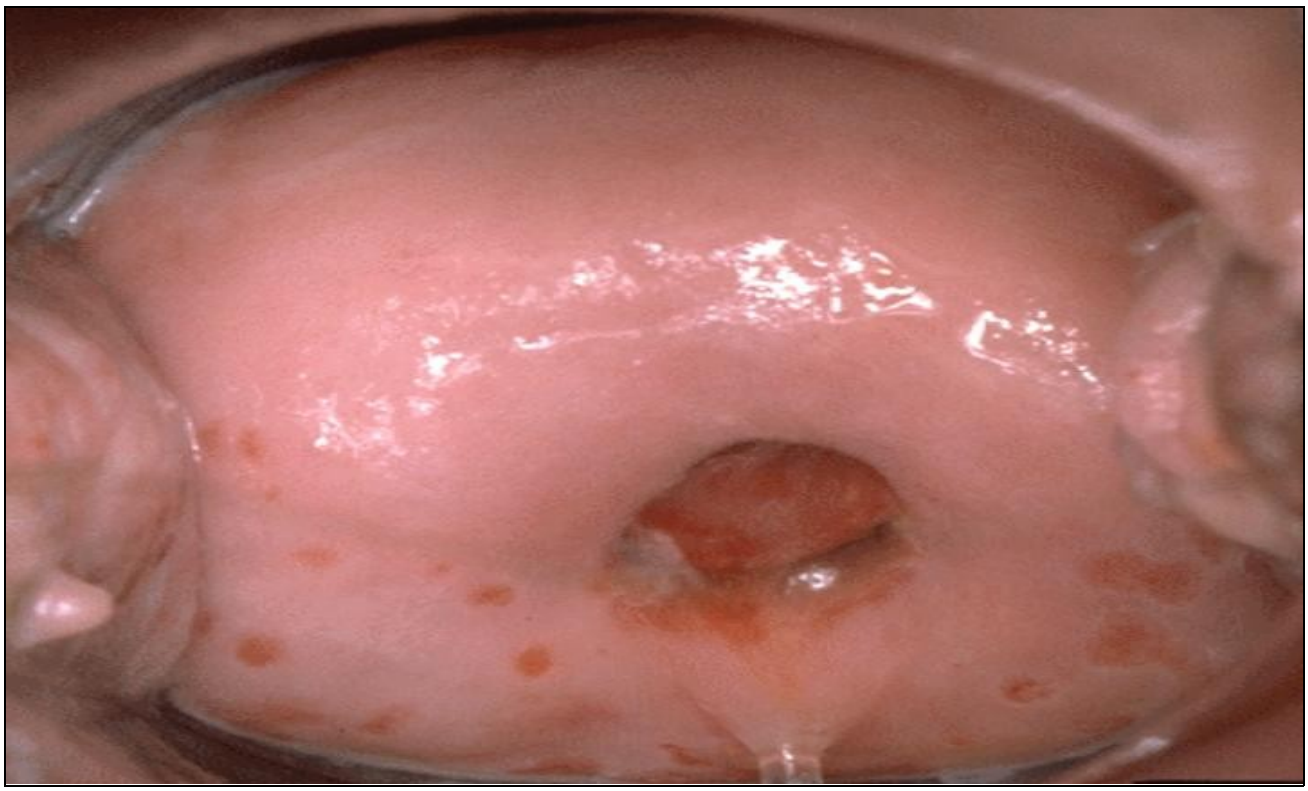
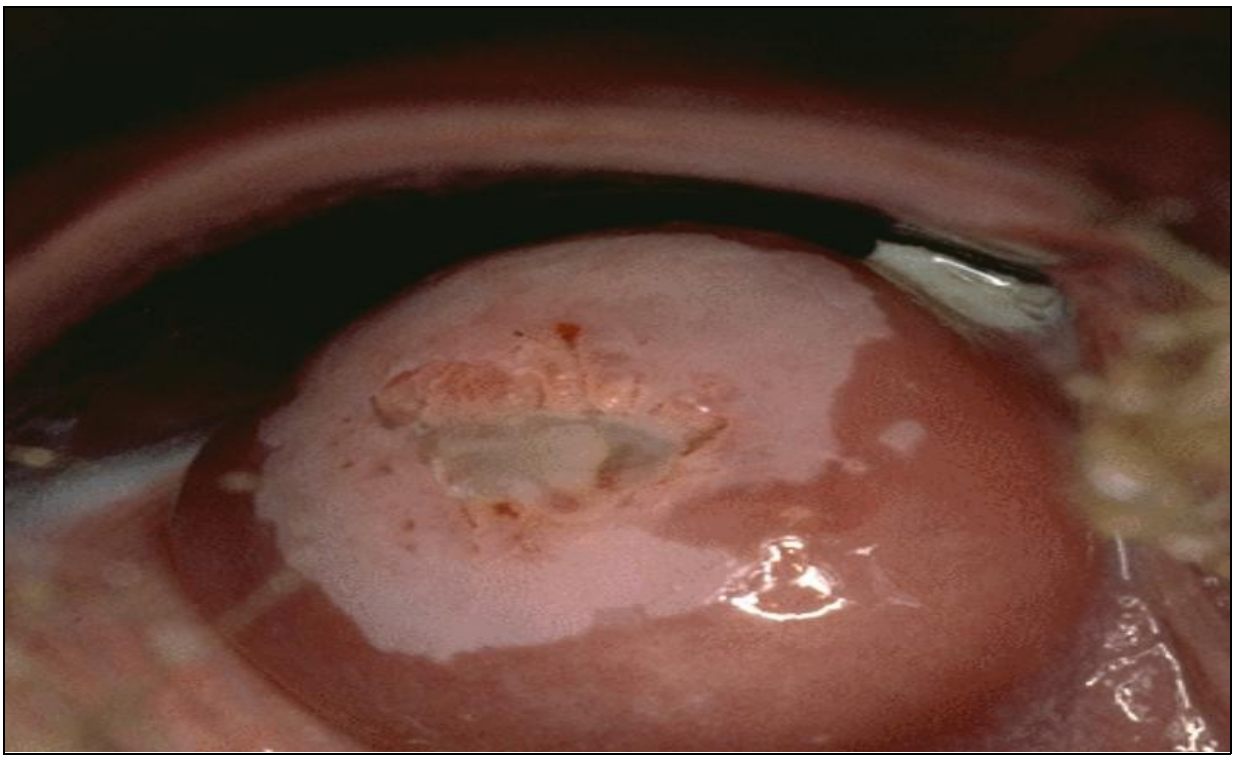
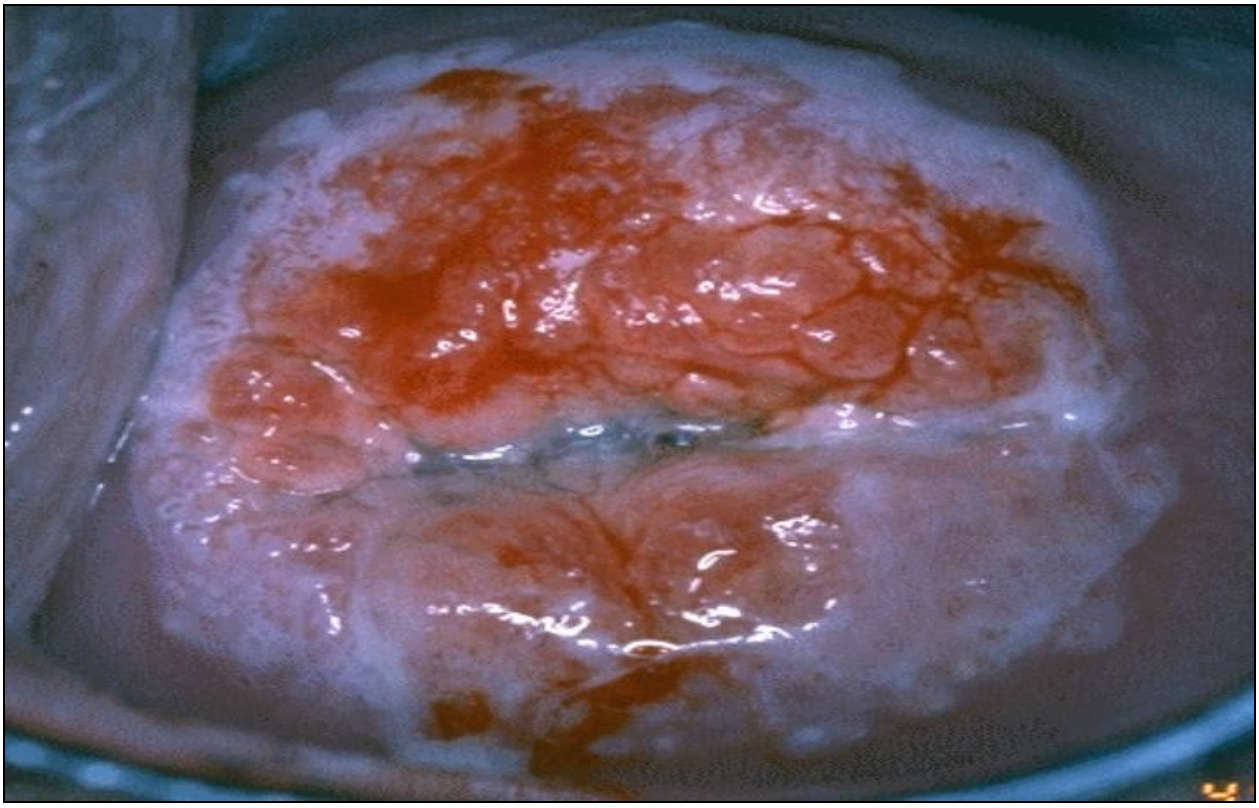


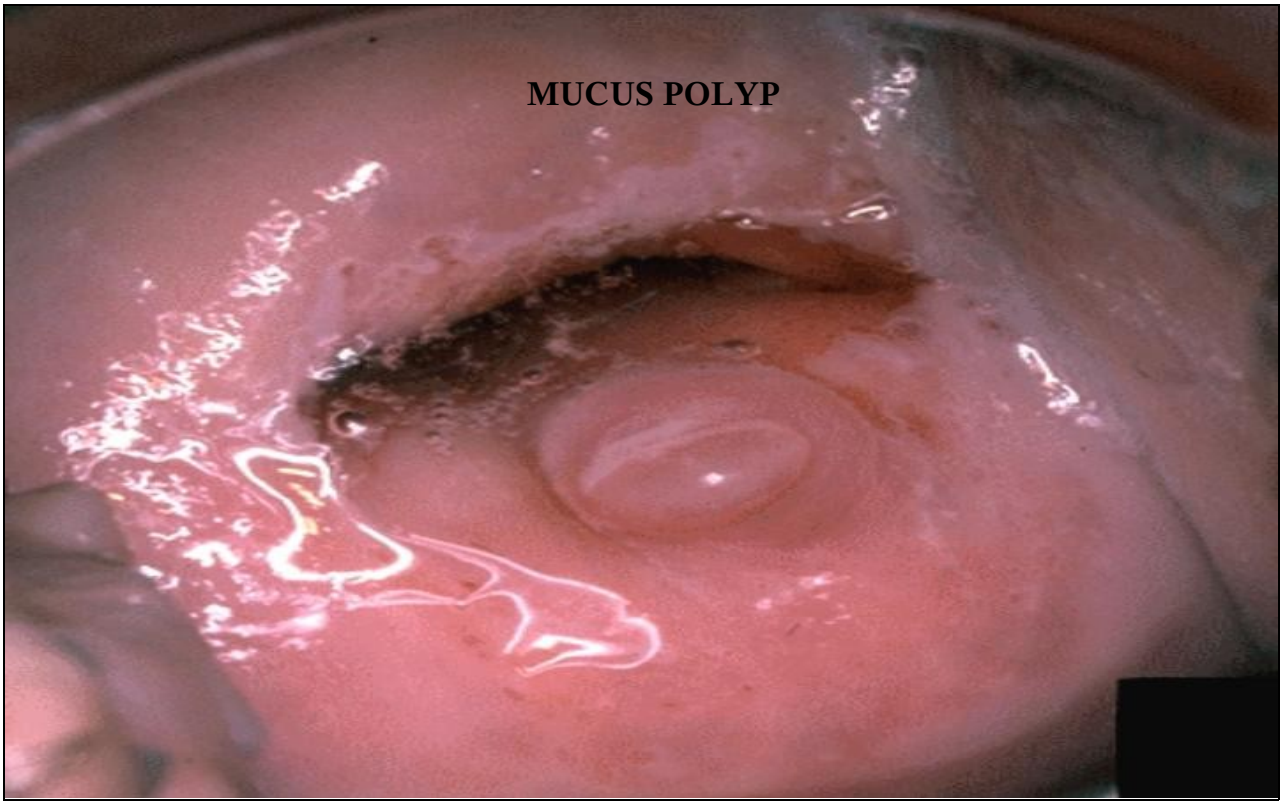
CERVIX WITH POLYP PROTRUTING POLYP THROUGH OS



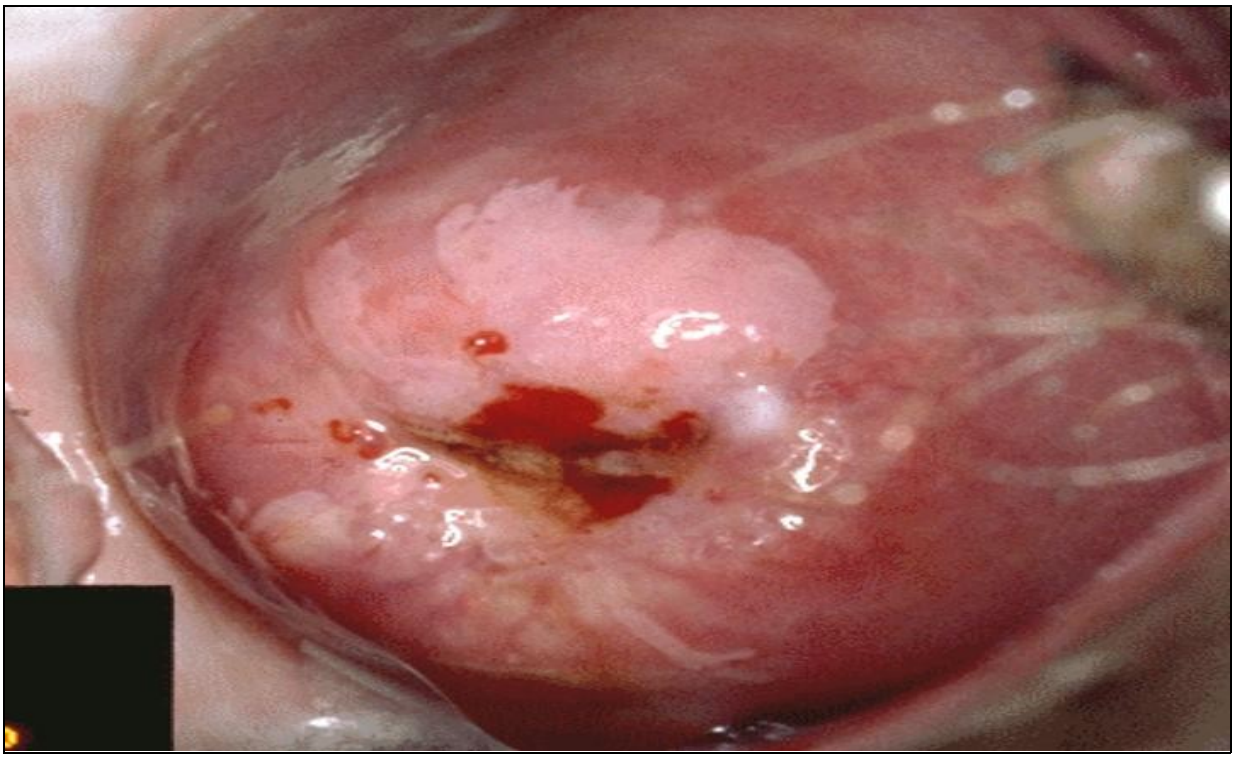
VILI POSITIVE



CHRONIC CERVICITIS



MUCUS POLYP



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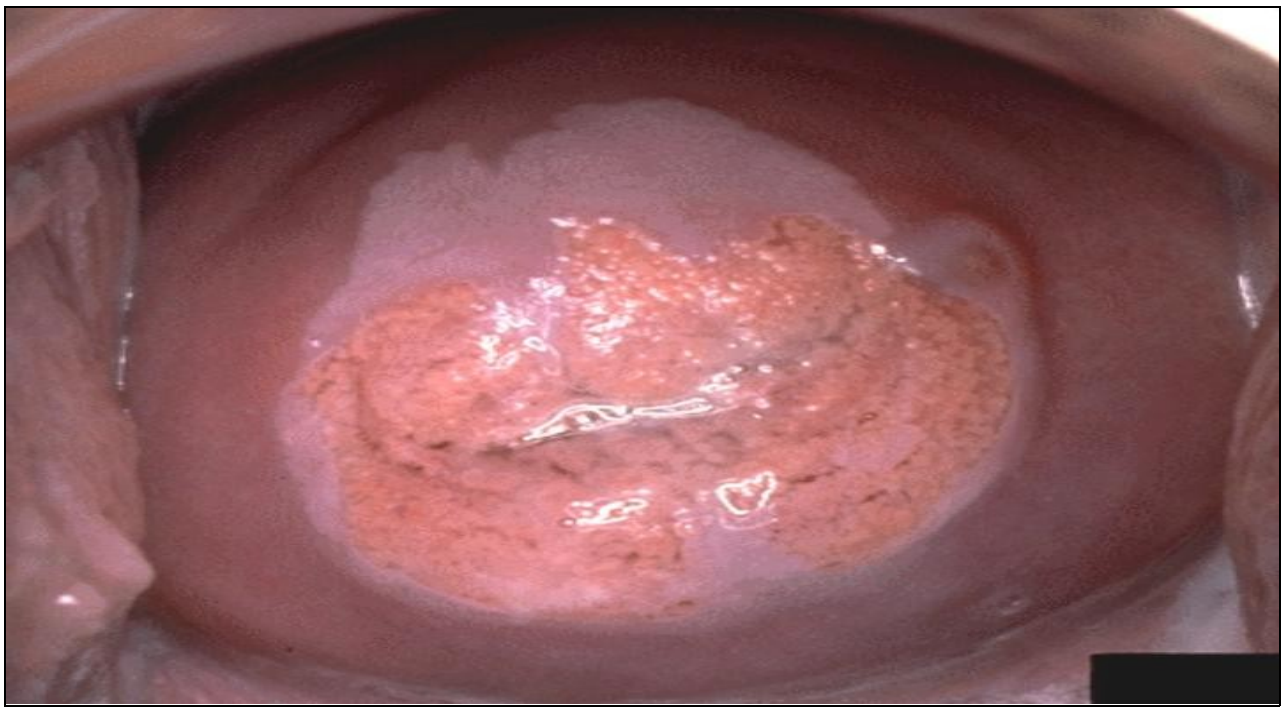

VILI POSITIVE LESION